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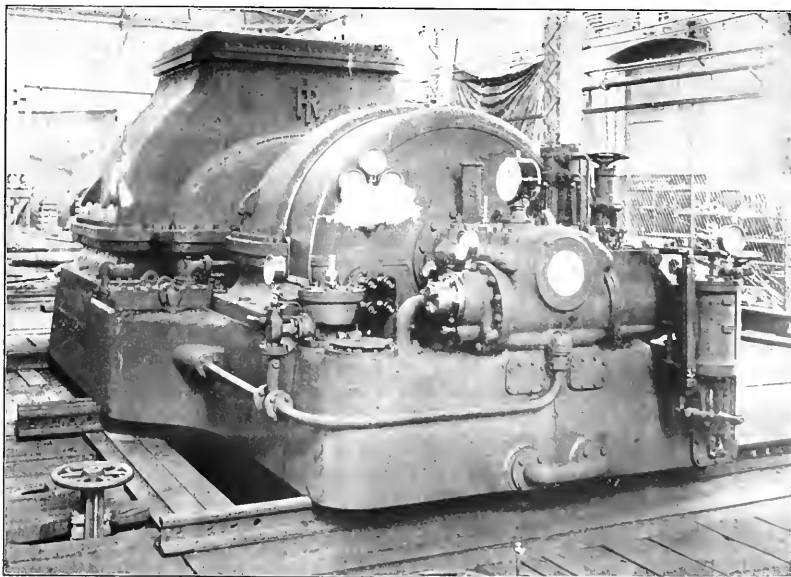
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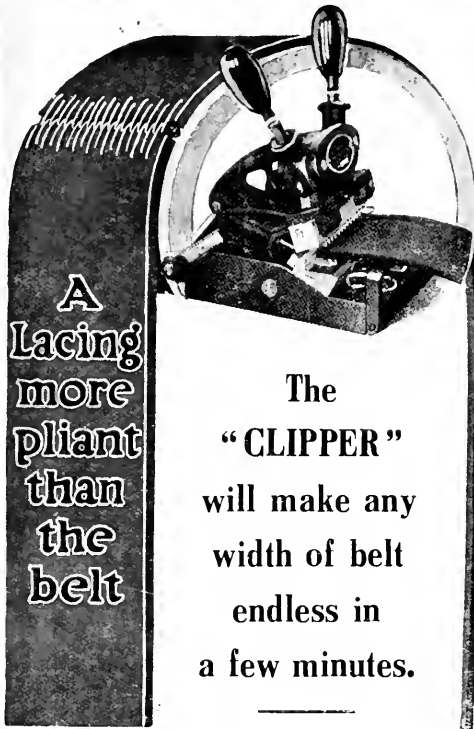
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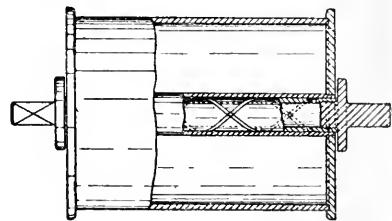
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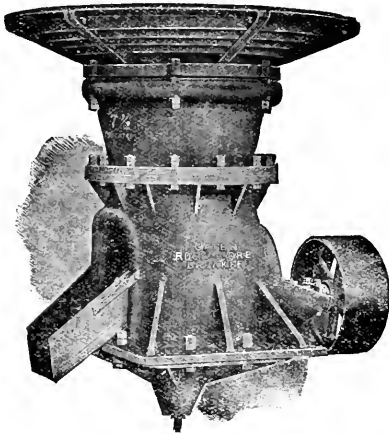
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CONTENTS.	PAGE
Notes and News	685
Topics of the Week:	
The Truth About American Capital	687
The New Enemy Trading Bill	687
Why Government Should Encourage Mining	688
The Rich Ore Shoots or Patches of the Far East Rand	689
Main Reef Beyond Heidelberg	691
A Year of Mining in Cape Colony and Natal	692
Producers of the Far East Rand: III.—The Sub Nigel	693
Application of Electric Power to Rand Mining Work—	
II.	694
Chamber of Mines' Annual Report	695
The Week in the Mining Material and Engineering	
Trades	699
The Week in the Sharemarket	701
Company Meetings: Glencoe Collieries, Apex, Anglo-	
French Coal, Koffijfontein Estates	702
Engineering Notes and News:	
Civil Engineering in South Africa	707

Notes and News.

The Consulting Engineers attached to the New Rietfontein Estate states that the mine payable by the estate to the New Rietfontein mine is exhausted during 1915, and it will be closed to suspend mining operations.

August. This date in was come to after the first half of the year, for several months, it being found that the prospects were not good enough to justify any further losses. The slim plant was kept working until December in order to treat some of the slime. Operations have now entirely ceased, and efforts are being made to dispose of the plant. Up till the end of the year machinery and plant to the value of £13,600 had been sold. Satisfactory prices are being obtained, and in view of the difficulty of importing stocks at present, it is hoped that a large percentage of the plant remaining on the property will be disposed of.

* * *

The report of the directors of the Randfontein Deep, to be submitted to shareholders at the thirtieth ordinary general meeting, called for the 31st day of March, 1916, shows that the capital remains the same as at 31st December, 1914, namely:—Authorised, £950,000; registered capital, £703,220; less reserve shares, £35,331, leaving an issued capital of £667,889, in 667,889 shares of £1 each, fully paid. The property remains the same as at 31st December, 1914, and consists of:—a) Mynpacht No. 397, in extent 100 morgen, equal to 144 claims; (b) 1,111 1217 claims; (c) 6 water-rights, on the farms Rietveld, Uitvalfontein, and Luipaardsvlei, in the mining district of Krugersdorp. The balance sheet shows that the expenditure incurred during the year was £7,095 1s. 6d., the items being:—Claim licences and minepacht dues, £4,795 3s.; expenses in Johannesburg and London, £1,301 7s. 6d.; income tax paid in London, £398 11s.; total, £7,095 1s. 6d. The revenue from rents, interest, etc., was £3,584 15s. 9d. The available cash at the end of 1915 was £53,979 7s. 1d.

* * *

It is understood that fifteen subscribers have put up £10 each to enable Messrs. H. R. Powell and J. E. Jones, late of Coronation and Great Eastern Collieries respectively, to proceed to the Karroo Coal Syndicate's property with the object of thoroughly investigating the prospects of the property. Providing these gentlemen are satisfied with the prospects it is intended to form a development syndicate to sink and drive upon the coal filled fissure, which has a width of five feet at the lowest point, with the object of estimating the coal resources of the properties held under option by the original Capetown Syndicate, who it is understood has spent some seven or eight thousand pounds on the properties in one way or another.

* * *

The Option Certificates to bearer, issued to the original allottees of the Springs Mines, Limited's, debenture issue may be lodged at the company's office during business hours on May 2. The public was recently notified that the last day upon which the options could be exercised was May 1 next. It has, however, come to the notice of directors that many holders of the option certificates were of the opinion that their rights expired on May 2, and the decision of the directors as indicated above was arrived at in order to avoid causing disappointment to holders of option certificates to take up shares at par in the capital of the company.

* * *

In the House of Assembly this week, Mr. Madeley was told by the Minister of Finance that the revenue derived by the State from the Premier Diamond Mine for the three years prior to closing down was £1,220,084, the amount derived by the company was £819,389, the amount paid in dividends £920,000, and the total gross

Questions in Parliament.

revenue earned during that period was £6,080,369. It was contrary to the practice of mining companies to allow for depreciation, new buildings, new machinery, development, or investment in other concerns. The Premier Company was no exception to that rule. The company had no investments during the years in question except the trading and emergency funds, and no depreciation therefore was provided during that period. In reply to Mr. Sampson, the Minister of Mines stated that the hours for underground workers at the Messina copper mines were 9½ bank to bank. Being a base metal mine, it was exempt from the eight hours' provision laid down in the Mines and Works Act. The mine being damp, he was informed that there was no dust in it, and the mine was not on the phthisical list. So far as was known, there had been no primary case of phthisis at that mine.

In the House of Assembly this week, Mr. J. B. Robinson asked whether the Randfontein mines were working exclusively by machine drills, whether the Randfontein Group did not do 99 per cent. of their stoping by hand labour, using hammers for the purpose, whether the full quantity of rock sent to the Central Randfontein mills, viz., 180,140 tons, during last month from the stopes was mined by hand labour except 186 tons by machine drills, whether machine drills did not cause infinitely more dust than hammer drills, and whether the narrowness and steepness of the Randfontein reefs and their wet condition did not tend to prevent any large quantity of dust arising. The Minister of Mines replied that no official returns were available, but, according to information supplied, all the groups mentioned mined a proportion of rock by means of hand drills. The official figures relating to the average number of machine drills at work in January last were as follows:—Central Mining 860, Rand Mines (including Crown Mines) 1,394, Neumann Group 464, General Mining and Finance 362, Goerz 211, Johannesburg Consolidated 609, Consolidated Gold Fields 686, and Farrar Group 318. According to information supplied by the management, it was correct that 99 per cent. of the stoping at Randfontein was by hand labour. The amount of rock stated as sent to the Central Randfontein mill did not appear to be correct according to information supplied by the management. Of 180,140 tons milled last month, 21,723 were mined by machine drills. Samples of air taken by the Miners' Phthisis Committee from hand stopes where gangs of natives were drilling yielded higher results in dust than samples from machine stopes, viz., an average of 4.5 milligrams per cubic metre of air for hand stopes as against 3.8 milligrams for machine stopes. The answer to the last question was in the negative.

The public will have been very considerably surprised and perturbed by the announcement that it has not been found possible to meet the present increased demand for Natal coal resulting from the diversion of steamships from the Suez Canal route to this southern one, and that it has been intimated to the said steamships that when bound eastward and to Australia they can only be provided with sufficient coal to carry them to the next port on their way to their ultimate destination, says the *Durban Advertiser*. Ships bound westward are not restricted. The whole position is deplorable. The entire Natal coalfields have never put out more than, say, between two and a half and three million tons of coal a year. It is insisted, however, on their behalf, that they could put out double the quantity, if only provided by Government with the necessary facilities for getting their output down to Durban, a mere 240 miles. Well, here comes an unprecedented opportunity for showing what they can do, advertising the quality of their coal over a huge area of the world, and incidentally coming to the assistance of the trade of that area, diverted as it is from its usual channel. Had this opportunity been made full use of, it would undoubtedly have opened the way to a vast extension of our coal export trade in the future, and, really, all that was needed was only the providing a total amount of coal that could hardly have doubled our normal output. Say it had meant an aggregate output of 5,000,000 tons for this

year, what of it? The little county of Durham, England, puts out 41,000,000 tons of coal a year, and its railways have never had the least difficulty in getting this huge amount down to the ports. Here in Natal, however, there is a sudden demand for, at the most, 5,000,000 tons in lieu of the usual 2,500,000 tons, and the Government, or the collieries, or the two together, declare the thing can't be done!

The estimates of expenditure of the S.A.R. and Harbours, as laid on the Table of the House, **Railway Finance.** show that the total estimated expenditure for 1916-17 is £13,737,027, namely, £12,561,101 for railways and £1,175,926 for harbours, an increase of £670,069 (£571,553 for railways and £98,516 for harbours) on the estimated amount for 1915-16. Regarding railways the chief increases are £674,000 for depreciation (no provision having been made under this head for 1915-16); £232,817 on running expenses (total £2,167,838); £124,323 on traffic expenses (total £1,878,240); £98,746 for maintenance of rolling stock (total £1,562,246); and £84,172 in regard to interest (total £3,060,599). As against this there are several large decreases, notably £535,381, the deficit on the working in 1914-15 now wiped out; £115,548 under the head "Miscellaneous," and £112,922 on renewing and strengthening the permanent way and works. In a memorandum the Minister of Railways points out that the estimates last year were framed on a low basis, whilst these provide for more normal conditions. The proportion of the pay of men during absence on active service borne by the Railways and Harbours Department is £100,831, a decrease of £116,298. The memorandum shows that increases have been brought about (among other causes) by a reduction in the number of men on active service, by the larger cost of materials, an estimated increased tonnage of public traffic, increments, replacement of natives by whites, etc. The "Summary of Staff" for the Railways shows a total personnel of 52,220 against 53,995, and for harbours 3,524. The salaries and wages bill for the Railways comes to £6,561,264, of which £850,631 is recoverable from various sources. In the S.W. Protectorate 4,405 men are employed, of which 3,525 are natives.

A paper of considerable interest, which had been prepared by Dr. A. L. du Toit, of the Geological **Southern Kalahari Survey** of the Union, for presentation to the **Karoo System.** the Geological Society of South Africa, was read at the last meeting of the Society on Monday evening. It dealt at some length with a good deal of evidence, largely collected from boreholes, relating to the extension of the Karoo System under the sandy wastes of the Southern Kalahari. The subject has been treated in detail by Dr. P. A. Wagner in his memoir upon the geology and mineral industry of South-West Africa, and the paper referred to, besides adding confirmation to much that has been stated in the memoir, records the results of observations over a wider field. It is shown that in South-West Africa, no less than in the Congo region, in Swaziland, Rhodesia and other territories where the Karoo System has been investigated, there is a special phase which may be said to be characteristic. As has already been remarked, Dr. Du Toit has collected information as far as possible from boreholes which were put down by the Government in connection with the campaign against the German forces. Owing to the fact that these boreholes were sunk by means of percussion drills, it was difficult to interpret the evidence with completeness. Enough data have been obtained, however, to prove the extension eastwards into the Kalahari of a vast area of Karoo beds. Later on the importance of the Karoo beds as a source of water supply will doubtless lead to further investigations under Government auspices. It is interesting to learn, by the way, that the "white band" of the Southern Karoo finds its equivalent in the "white zone" of the Keetmanshoop district, and that the volcanic beds of the Gibeon, Rehoboth and Gobabis districts are of similar type and apparently of the same age with those of the Drakensberg. These two points in Dr. Du Toit's paper are of some importance in themselves, and as confirming the view of Dr. Wagner.

Natal Coal Trade.

TOPICS OF THE WEEK.

THE TRUTH ABOUT AMERICAN CAPITAL.

THE publication of the article in our last issue on the coming of American capital synchronised with the appearance of a Reuter cable announcing that the representatives of a strong New York group of financiers were on the way to investigate the investment possibilities of certain Far East properties. The fact has furnished the topic of the week, and, unfortunately, been used on the sharemarket for bringing into prominence all sorts of dormant, not to say derelict, ventures that have nothing to recommend them but their degree of distance from the successful, developing properties of the Far East Rand. It is manifestly impossible for all these properties to be financed for a considerable time; and a word of warning may, therefore, be offered against the explicit acceptance of all the rumours circulated. It must still be admitted, however, that the hopes raised regarding American capital have had a beneficial effect. As the cables have shown, they have stimulated the London money market to unwonted interest, and drawn from that centre an emphatic protest against the tacit assumption that the war had rendered it unable to compete. Whether the source be London or New York, the Rand will welcome the capital necessary to develop the Far Eastern basin. No less an authority than Mr. F. W. Hirsch, the editor of the "Economist," in a recent lecture at the London School of Economics, has declared that after the war the Colonies will have to provide themselves with most of the capital required for their development. Though, as some figures recently compiled by the Chamber of Mines show, South African investors are in an increasing degree acquiring the cream of Rand dividend-paying stocks, the day when this country can satisfy the demand for fresh capital for the extension of the gold mining industry seems still far distant. Outside capital must continue to be interested in the development of our industrial resources; and the only question is to what extent the United States will be able to supply that capital and so fulfil the roseate expectations recent cables have aroused. As far as we can gather, authorities in that country differ in their answers to the question. Thus we have the latest monthly circular issued by the National City Bank of New York stating: "Large advance payments have been made upon contracts, and the loans that have been made, nearly all of which were for purchases in this country, are to an important extent unexpended. But for the lack of ships and consequent congestion of freight at the ports our exports would have been much larger, and these delayed shipments are covered by funds awaiting disbursement. There also remains to be accounted for a very important sum, in the aggregate, of bank deposits, representing transfers to this country from all quarters of the globe, for safe-keeping and for business purposes. The position of New York outside the area of war, the stability of New York exchange upon a gold basis, and its availability for payments anywhere have attracted these funds." Commenting on the statement of the National Bank, the "Statist" remarks: "The calculation is made that America has also brought back from abroad 1,000,000,000 dollars of her own securities over and above the money she has lent abroad, and that she has been able to make payment for these securities, first, by means of money received as advance payments for goods which will only be delivered in 1916, and second, because foreign countries 'in all quarters of the globe are sending money to the United States for safe custody and for business purposes.' It is believed that Germany has sold a large quantity of American securities in the United States in the past year, and it is known that Great Britain and France have also sold substantial amounts." Again, we have Dr. Arthur Selwyn-Brown writing to "The Engineering Magazine" on post bellum mineral production:—

"It is probable that the war will be followed by great commercial activities in the successful nations and in neutral countries. And this will result in large demands for capital, high interest rates, inflation with its concomitant speculation, and high commodity prices. Under such circumstances, we may expect a large investment of new capital in metal mining, increased outputs of metals, and the

introduction of new mining and metallurgical methods and processes through the stimulation of the large profits gained in the metal industries. How long such conditions will last will depend entirely upon the speed with which capital circulates. If investments and speculative commitments are made with feverish haste in the principal countries, the post bellum prosperity will be short-lived. If, on the other hand, developments are carried out in a conservative and orderly manner, it may be some years before the injurious effects of the war upon the world's accumulated capital are seriously experienced in commercial operations. In any event, the demands for all the common metals, which we may assume will certainly follow the ending of the war in some countries, if not in all, to restore the destruction done in the commercially productive portions of the war zones, will be imperative and extensive. These demands will cause not only increased metal production but high metal values; and these in turn will cause prosperity in the mining and metal industries, the establishment of new metallurgical industries, and the opening up and development of new mines and mining districts throughout the world."

Against this we have the opinion of no less an authority than Mr. G. E. Roberts, formerly Director of the United States Mint, who, in a recent address, declared that "there can be no general revival of trade in the countries where we hope for it most; no large opportunities unless we take the place of Great Britain and Germany in providing capital for development purposes." Leaving Germany out, it is assuredly true that the cessation of the stream of British capital has thrown the economic balance of South America out of gear. Mr. Roberts finds the United States unprepared to step into the vacant place. "We are practically without experience with investments outside of the country, and it is a problem how long it will take us to develop in this country a body of cosmopolitan investors such as there is in England. Our commercial banks cannot properly tie up their customers' deposits in stocks and bonds of foreign corporations, no matter how good they may be. Savings banks cannot do it. We must look to private investors. These need leadership and organisation, and so far only the most elementary steps have been taken to explore the ground." This point in Mr. Roberts's address gives the clue to the references in New York cablegrams lately to the doubts that have begun to assail the earlier confidence of Wall Street to conquer the world, commercially and industrially, after the war. The worth of these opposing views, of course, remains to be determined by events. Whatever happens, and however small the actual result of all the talk about "fresh blood" and competition from American capital, the Far East Rand has secured an excellent advertisement. The only danger is that much of the value of the advertisement may be lost through the efforts of the unscrupulous to turn it to their own uses.

THE NEW ENEMY TRADING BILL.

THE Executive of the Chamber of Mines mentions in its annual report that it has under consideration the latest Enemy Trading Bill of the Union Government, which the Minister of Finance brought up for its second reading on Thursday. The draft Bill to deal with the subject has been revised, in order to bring it into line with the latest legislation in the United Kingdom. The Bill as originally drawn up conferred upon the Treasury powers of supervision and control over suspect businesses, but stopped short of enabling such concerns to be actually wound up, the proceeds being merely vested in the Treasury until the termination of the war. The new Bill goes much farther, and creates powers for the prohibition of further trading, or for the issue of a winding up order, where it appears to the Treasury that the operations in question are being conducted wholly or mainly for the benefit of or under the control of enemy subjects. The reasons for this were explained by the Solicitor-General in England, Sir George Cave, when he introduced the amending proposals of the British Act in the House of Commons on January 21st. It was pointed out that if firms or companies—and the circumstances apply in particular to companies having enemy shareholders—carried on wholly or mainly for the benefit of enemy subjects, were allowed to go on trading during war-time, the mere taking over and retention of the proceeds for the time being was not enough. The goodwill was being maintained, and might even be increased, while there was the possibility of actual

war profits being made, all of which would go to the accumulation of a fund that might eventually revert to the enemy, and constitute a considerable strengthening of his resources for resuming the economic struggle after peace had been restored. In addition, the revised Bill has undergone, in other respects, a general process of widening and expansion in accordance with the later British law. The terms "alien enemies," or "the enemy," are broadened into "enemies and persons of enemy nationality in the Union," persons of "enemy nationality" or "enemy associations," and "enemy subjects." "Enemy" is defined as "a person who is an enemy or is treated as an enemy under any proclamation," etc., while "enemy subject" means a subject of a State for the time being at war with His Majesty, and includes a body corporate constituted according to the laws of such State. Every enemy subject, every firm or partnership in which any partner is an enemy subject, every company in which any shareholder or debenture-holder is an enemy subject, and every person carrying on business in their behalf in the Union, or agent for such business outside the Union, is required to notify in writing to the Treasury within one month after the commencement of the Act that such business is being carried on. Then follow the provisions as to prohibition or winding up where the business is being carried on wholly or mainly for the benefit of or under the control of enemy subjects. The Treasury "shall" make such order, "unless for any reason it appears to it inexpedient to do so." A controller may be appointed to supervise winding up, with powers of liquidation. In any distribution of assets, preference is to be given to creditors who are not enemies. For taking charge of such assets as, but for the war, would have been payable to enemies, a "custodian of enemy property" is to be appointed, this being a new office created under the amended Bill. Lists of persons, firms, partnerships, and companies as to whom winding up orders have been made are to be published. Such orders are to continue in force, notwithstanding the termination of the war, until such time as may be determined by subsequent proclamation. It will be necessary after the war to have an intermediary period during which the whole position can be considered and dealt with, in the light, among the rest, of the ultimate German policy regarding the British property, which the Germans are said to have at the outset incontinently seized. The general powers of inspection, etc., provided in the original Bill, are of course retained in the new draft. There are new clauses dealing with the creation of the office of custodian, and empowering him to hold all monies, etc., which would under normal conditions have been payable in enemy quarters, lengthy provisions being incorporated in this connection regarding companies, shares, etc. The duty of trustees for enemies to notify the custodian is dealt with in succeeding clauses, whether as regards persons, or companies, etc., other provisions following having reference to the powers for vesting property in the custodian, and the custodian's powers for dealing therewith. The invalidity of assignment of debts by enemies, right to pay to the custodian sums due on coupons suspected of being enemy property, conditions as to the incorporation of new companies, powers for winding up of companies in certain circumstances, are dealt with, among other contingent matters, in further clauses, while the necessary general powers to prohibit trading with persons of enemy nationality or enemy association, etc., are duly conferred. It is impossible to indicate all the points of detail in regard to which the new Bill differs from the earlier one, but a comparison of the two drafts will suffice to show that much wider ground is now covered. Further comment may be reserved until the Bill emerges from the Committee stage.

WHY GOVERNMENT SHOULD ENCOURAGE MINING.

THE folly of taxing mines once again becomes a burning topic in view of the imminence of the Union Budget. In the course of a valuable paper read recently before the International Engineering Congress at San Francisco, Mr.

H. V. Winchell points out that a reason why aid should be extended to a mining industry was found in the fact that few countries were independent and self-sufficing in their production of minerals and ores. This fact is brought prominently to the front at the present time, by the interruption to the world's commerce occasioned by war. Mr. Winchell goes on to show that if it is important for the people and government of the United States to aid and encourage the development of its own mineral resources, how much more important should such efforts be for those countries which have not the generous provisions of nature in the shape of easily won mineral deposits. Nor is it alone the State Government which should evince an interest in the working of mines. Every province, he says, should do its share, and instead of looking upon mines as something to be taxed to the very limit or beyond, should feel that it is of intimate and vital importance to every citizen of the State or Province that its mines and quarries be worked to the highest stage of productivity of which they are capable. Far greater than the value of the taxes paid into the State treasury is the benefit derived indirectly from great institutions for the production and working of minerals; and the operation of steady mines and metallurgical plants in a community is of incalculably greater importance than the derivation of direct revenues to enrich the public treasury. For concrete examples of the truth of this statement he quotes Chile with its nitrate deposits paying millions yearly to the government and then turns to Sweden and observes its wise policy of encouragement of the development of its mines. The former country has not only not aided in the nitrate industry, but has done its best to turn it into cash for the Government treasury, much to the disadvantage of public morals; the latter country has given its lands freely, has appropriated large sums for railroads and for other necessities to those who would develop an industry which would afford permanent employment to large numbers of labourers. Full discussion of this subject would involve consideration of the bearing of mineral production on all lines of industry; it would necessitate a study of modern civilization and industrial development in all lands. For those who are already students of the subject, such elaboration is superfluous; to those who are not, it would be tiresome and unread. Enough has been said to indicate its importance. Mr. Winchell declares that the following propositions may be taken as established beyond question: (1) From the dawn of civilization to the present time national standing has been dependent on and conditioned by mineral wealth and consumption. (2) Next to agriculture no industry so deserves the sympathy and aid of governments. (3) The attention of legislators, should not only be invited but compelled to the necessity for wise and sympathetic legislation in connection with the mining industry. (4) It is incumbent on every engineer and mining man, and indeed upon every citizen, to insist that our mining laws shall be most carefully framed so as to promote the interests of the mining industry, and hence of every industry throughout the entire length and breadth of the land.

The third volume of the Statistical Year Book of the Union (1914-15), price 10s. 6d., has just been issued. Within the covers of a bulky Blue

Book of 355 pages are comprised tables of statistics dealing with population, industry and trade, finance, government, education, administration, and other departments of the social, economic and political life of the Union, printed, it need scarcely be said, in both the official languages. The tables are practically identical in form with those published in the preceding issue, but it is explained in the preface that a few additional ones have been added, and fuller particulars given in some of those previously compiled. In the section dealing with railways, certain tables have been omitted, shortage of staff in the department having prevented the completion of the returns. Existing circumstances have also led to the omission of particulars relating to defence, while returns from local authorities in the Cape Province are still incomplete.

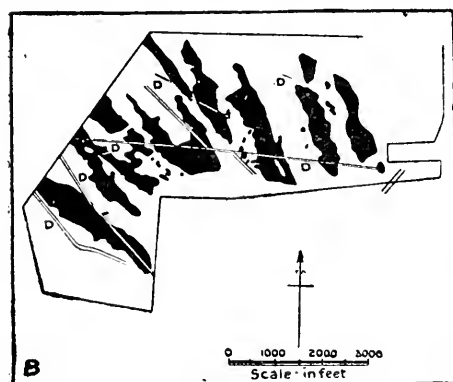
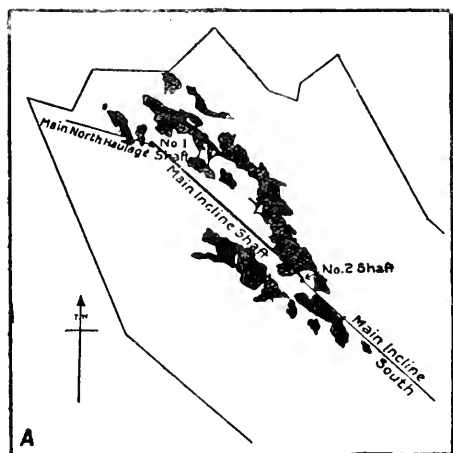
THE RICH ORE SHOOTS OR PATCHES OF THE FAR EAST RAND

Persistence of Same Reef from Van Ryn to the Nigel—Similarity of Conditions at Brakpan, Nigel, Van Ryn and Kleinfontein.

The following extract from Dr. Meller's paper on the Rand conglomerates will be read with interest, in view of the prominence now being given to the mines of the Far East Rand:—*Special features of the reef in the Far Eastern Rand. Existence of patches or shoots.*—Owing to extent to which the Far Eastern Rand has been explored and to the consistency of the results obtained there is very general agreement to-day as to the persistence of the same reef throughout the whole of the Far Eastern area, from its outcrop at the Van Ryn on the north to the corresponding outcrop at the Nigel Mine on the southern limits of the basin. The study of the distribution of the conglomerates over this wide area and of

form a continuous sheet over the underlying "Slate foot-wall," as at the northern margin of the basin, but is distributed in a number of completely isolated lenticles separated by entirely barren ground. As a result of nearly 30 years working the distribution of the patches or lenticles of conglomerate in the Nigel is now known in great detail, and is represented in Fig. 1, which is taken from the mine plan. Each of the shaded patches in the figure represents an individual lenticle of conglomerate, which lies along the plane of junction of a considerable thickness of "slate" as a foot-wall, with a body of some 250 ft. of quartzite which forms the hanging country of the "Reef." The lenticles average about 3,000 ft. in length by 700 ft. in breadth, and when well developed have a thickness of about 2 or 3 feet. Towards their edges they thin out more or less gradually. Smaller patches may exist between the larger ones, but as a rule the intervening spaces are entirely devoid of conglomerates, and nothing remains but the plane of junction of the quartzites and are known in the mine as the "contact." The occurrence of gold is practically limited to the conglomerate patches, and in the absence of conglomerate the contact is barren. Similar conditions can be observed also along the actual outcrop of the reef-horizon in many places in the Nigel neighbourhood in a southerly or south-easterly direction, except that the patches of conglomerate show a marked diminution both in extent and in number as well as in the size of the constituent pebbles. On the other hand, in a northerly or north-north-westerly direction the available evidence goes to show that while a similar mode of distribution prevails the patches are probably of larger extent, attain a greater maximum thickness, and include pebbles of large size. Still further to the north-north-west a similar arrangement is to be observed in the distribution of certain more robust portions of the reef distinguished by greater thickness, by larger pebbles, and other qualities well known to local mining men as indicating "reef" of superior quality. In the last example, however, the interspaces between such patches instead of being devoid of reef are occupied by conglomerate of an inferior degree of development showing smaller pebbles and a lesser thickness. Thus within the general mass, "shoots" of specially good material are distributed in a manner similar to that shown by the individual conglomerate patches at the Nigel.

Conditions at Brakpan, Van Ryn and Kleinfontein.—These conditions are well seen at the Brakpan Mine, a portion of which is represented in Fig. 3. The shaded portion here indicates approximately the shape and size of one of the characteristic patches, which has been extensively worked. The figure is drawn to the same scale and oriented similarly to the Nigel plan, and the marked similarity in character and parallelism in direction is so obvious as to point unmistakably to the conclusion that the distribution of the better portions of the reef in this locality is due to the same causes as determined the arrangement of the more completely isolated patches of the Nigel. Still further to the north-north-west in the neighbourhood of the well-known Kleinfontein and Van Ryn Mines very similar phenomena are to be observed in the disposition of certain areas in the mines distinguished by particularly well-developed reef associated with exceptionally good values. The existence of these "shoots" of particularly good ore has long been definitely recognised by the officials connected with these mines, and it was probably one of these which was referred to by Gregory in connection with the Van Ryn Mine. These "shoots" of exceptional values coincide, as at Brakpan, with corresponding patches in the conglomerate distinguished by larger average size of pebbles, greater thickness, and various other definitely recognisable characters closely connected with peculiarities of original sedimentation. Although clearly recognised in the mine they do not come out very definitely in the mine plans and other records for



A—BRAKPAN. B—NIGEL.

the variations in its character offers some extremely interesting points. These have been dealt with at some length in a previous description, but certain special features may be again briefly referred to. One of these, which is closely connected with the occurrence of gold, is the distribution of the conglomerates in perfectly definite and well-marked patches.

Conditions in the Nigel Mine.—This is best seen on the extreme south-eastern fringe of the eastern basin in the neighbourhood of the Nigel Mine, and comes out with special clearness in the Nigel itself. In this and adjacent mines the conglomerate which constitutes the "Reef" does not

various reasons. Thus the fact that richer patches, instead of being separated by intermediate areas of conglomerate of low value, largely left untouched, as at Brakpan, or by areas containing no conglomerates at all, as at the Nigel, form part of a wide area of conglomerate nearly all of good value and consequently worked as a whole, prevented such patches becoming evident in the stope plans as at Brakpan and the Nigel. Furthermore, the larger size of the "shoots" and the lesser extent to which they have at present been followed individually in the direction of their long axes further militates against their being so obvious and easy to recognise as in the areas further south. An examination of the better-known examples, however, leads very definitely to the conclusion that we have here "shoots" of an exactly similar nature to those of Brakpan and the Nigel, but forming specially well-developed portions within a general area of conglomerate which, as a whole, exhibits stronger development than is usual in the mines to the south-south-east. If now the Nigel, Brakpan and Van Ryn Mines be located on a general plan of the Eastern Rand it will be seen that they lie almost along a straight line drawn across the eastern area from N.N.W. to S.S.E.—that is, in a direction closely parallel to the long axes of the patches themselves, and there can be no doubt that along this line a mode of distribution of the conglomerate similar to that described above generally prevails. Further east, in the neighbourhood of Springs, corresponding conditions are found, and evidence is also forthcoming which renders it highly probable that a similar method of distribution will be found to a greater or lesser degree over the whole eastern area.

Similar conditions probably general throughout the Far East.—Indeed, from a consideration of the data at present available with regard to the reef in the Eastern Rand, including many widely separated localities, taken in conjunction with the results of a very extended survey of the Witwatersrand formation as a whole, it seems very probable that the sheet of conglomerate which forms the principal reef in the Far Eastern Rand is very generally characterised by the same mode of distribution.

Mode of deposition of the reef in the Eastern Rand.—Further, from what we know of the thickness of this sheet in many widely separated localities and of the variations in different directions which it shares in common with many other associated members of the system, it appears probable that the original form in which this particular bed of conglomerate was laid down was a broadly tongue-shaped sheet with its base lying considerably to the north of the outcrop of the reef on the Central and Eastern Rand, and its apex to the south of the town of Heidelberg. The breadth of this sheet from east to west was approximately 40 miles, and its length when complete probably not less than half as much again. The peculiarities just referred to, shown by the reef of the Far Eastern Rand, are very difficult to account for on any other supposition except that the deposit is one which was laid down by a broad but comparatively uniform current over a very extensive area of almost uniform level, but with a slight fall to the S.S.E., and this view finds support of the strongest character not only from the nature of the sediments whose deposition immediately preceded that of the reef on the Eastern Rand, but also from the evidence afforded by the whole of the Lower Witwatersrand System. Considerations limited to data available from the Central Rand have led practically all previous writers to associate the Rand conglomerates with littoral or even with beach deposits, but the conditions met with in the Eastern Rand can scarcely be explained in such a way. The view expressed in several previous papers that many of the members of the Witwatersrand System, including some at least of the conglomerates, originated as sediments laid down under conditions very nearly approaching those prevailing in or near extensive deltaic areas appears more in accordance with the whole of the evidence now available. Further, the conglomerate sheet which constitutes the reef of the Eastern Rand shows many evidences of having been laid down more or less continuously, and in comparatively short space of time as a single individual deposit. Among such evidences perhaps the most striking are its gradual and progressive

diminution in average thickness when followed in definite directions away from the area of maximum development, and the corresponding diminution in the average size of the constituent pebbles along the same lines. The distribution of the conglomerates in the irregular elongated patches above described, and the persistence of these as a gradually diminishing fringe beyond the main body, as shown in the neighbourhood of the Nigel, are also very striking features which it is very difficult to explain otherwise than in the manner suggested. Again, were the conglomerate a beach deposit which had gradually advanced over a sinking area, one would expect to find very frequent false bedding and other indications of irregular and interrupted deposition and also of considerable disturbance of the as yet unconsolidated and easily eroded deposits upon which the conglomerate was laid down. A feature in the Eastern Rand which appears to me to be particularly striking is that in certain mines like Brakpan and Springs, where some of the principal ways follow the reef in the direction of the long axes of the shoots for thousands of feet, and in which particularly clean and continuous sections are visible, anything like well-marked cross-bedding is practically absent, and the bands of smaller and larger pebbles in the reef very rarely show any rapid change in arrangement but are wonderfully uniform and persistent over long distances, any variation in their relative position or character being of a very gradual nature. So also both the average and the maximum size of the pebbles in the reef as a whole is remarkably consistent over areas of hundreds of square miles. We see then that there is a good reason to regard the principal reef in the basin of the Eastern Rand as a single individual sheet of conglomerate, thicker and more continuous in its northern and north-western portion, thinner and more and more broken up into isolated patches in its south-eastern extensions. Also, that this conglomerate sheet lies almost universally on a footwall consisting of some hundreds of feet of originally argillaceous beds so that the laying down of the pebble bed abruptly succeeded a long continued period of deposition of much finer sediments. Further, it appears probable that these peculiarities were due to deposition under conditions more or less like those of an extensive deltaic area and resulted from the rapid distribution of vast quantities of already graded material which had previously accumulated not very far from the area over which it was subsequently spread in the form in which we now find it.

Mr. Downing, a Director of W. E. Hortor and Co., Ltd., Sole Agents in South Africa for the Muldivo Calculating Machine, in his recent trip to England, visited the Depot of the English Agents, and reports as follows: "They are doing a big business, in fact, turning down orders. I went through their order file, and find they are selling to the largest and best firms in the country, banks, railways and Government officers, and getting very many repeats." The above speaks for itself, and everyone who uses, or thinks of using a Calculating Machine, should pay a visit to W. E. Hortor and Co., Ltd., Leader Works, Harrison Street, Johannesburg, and have the Machine demonstrated to them. It is entirely French made, and has been on the market for upwards of 20 years. It is equally serviceable for addition, multiplication, subtraction and division, and is kept in three sizes, 13, 18 and 22 figures in product.

Diamonds for America.

On the subject of the importation of diamonds into the United States, the President of the Pretoria Chamber of Commerce has received the following letter from the American Consul at Johannesburg: "With further reference to your letter of August 9th, 1915, and other correspondence on the subject, I have to state that, having requested from the Department of State statistics of the importation of diamonds into the United States, I am now in receipt of the following figures, showing the imports of diamonds during the first six months of 1915: Diamonds, uncut, £2,577,010; diamonds, cut, but not set, £4,804,622; total, £7,381,632."

MAIN REEF BEYOND HEIDELBERG.

Claimholders Waiting for "the Day"—Geology of the Coronation Line—Possibilities of the District.

The gradually increasing interest in the Far Eastern Rand, which threatens to assume the proportions of a "boom" now that American capitalists are being induced to take a hand in the game, seems likely to extend beyond Heidelberg before the movement comes to an end. Since the closing days of the famous Coronation Syndicate, when the so-called "Coronation Reef" was declared authoritatively, amidst the shrieks of an hysterical public, to be a fairly low down member of the lower Witwatersrand system, comparatively little has been done in the district beyond Heidelberg. Beyond the fact that the lower Witwatersrand admittedly extends over a considerable area, and that the upper Witwatersrand, including doubtless the Main Reef zone, occupies the centre of a long and somewhat shallow basin beneath a heavy covering of amygdaloidal diabase, very little of a definite kind is known about the geology of the neighbourhood. Although the leading mining houses of the Rand have not identified themselves prominently, it at all, with prospecting operations in that part of the country during recent years, work has been carried on intermittently by small syndicates, which have been financed locally or in England. The approaching excitement, that has nearly reached the Nigél, will certainly continue, before it subsides, into the region beyond it, and many claimholders are anxiously awaiting the first intimation that "the day" has dawned. Some have already taken steps to bring their properties to influential notice, both in England and the United States, and are hopefully awaiting results.

FAR SOUTH-EAST GEOLOGY.

Not much has been said, in all the discussion that has taken place during recent years upon Witwatersrand geology, with reference to the geology of what may be called the Extreme East, in contradistinction to the Far East of the Kleinfontein-Daggafontein area and the far south of the New Rand undertakings. In Dr. Mellor's paper upon "The Conglomerates of the Witwatersrand" reference is made to what is well known upon the Rand, particularly about Roo-depoort, as the Coronation Reef, and the author remarks that this is not to be correlated with the reef of the same name in the Heidelberg district, which attracted much attention some years ago, and gave its name to the Syndicate already mentioned. So far the work of the Survey has not been carried along the "Coronation Line," so that Dr. Mellor, who was only able to take a casual glance at the reef upon one occasion, has not felt justified in making any definite statement about it, with the exception of that just quoted. It appears that the name had its origin in the Heidelberg district, but since a similar name has been established along the Western Witwatersrand, and has been accepted in the nomenclature of the Geological Survey, it will be necessary to re-name the Heidelberg member later

on, in accordance with more recent classification. There seems little doubt but that the Heidelberg Coronation, as it may be known for the present, forms part of the lower Witwatersrand system. It is placed by Dr. Constopline in his Hospital Hill quartzite zone. The slates north of the reef, that is to say on its footwall side, are considered by him to be Hospital Hill slates, and this, together with a quartzite, appears to constitute the only reliable "marker" along the northern rim of the basin. To the south, and above the beds which immediately accompany the reef, there exists a great mass of amygdaloidal diabase, belonging to the Ventersdorp series, so that although there is the probability that the Main Reef zone and other upper Witwatersrand beds lie beneath this accumulation, no borehole evidence is available to enable a decision to be come to upon the subject. The amygdaloidal diabase covers a very large portion of the trans-Heidelberg area, and coal measures and beds of the Transvaal system elsewhere help still further to complicate the difficulties which are due to faulting generally in the district.

THE DASPOORT—HEX RIVER LINE.

Some fairly long stretches of country along the southern rim of the basin, however, may be followed without much trouble, and here correlation will doubtless prove a much more easy matter. From Mahan's Kraal to Daspoort, and again near Hex River and Silverbank, some useful sections may be obtained, and there are the data from boreholes to facilitate things somewhat. Some account must be taken, of course, of the fact that a general thinning out of the normal Witwatersrand section has taken place in that direction, as pointed out in Dr. Mellor's carefully collected borehole sections of the further East Rand, but it is quite probable that the Main Reef Zone will be found represented somewhere, even although under conditions which are of a distinctly local kind. What these conditions may be remains to be seen. As far as published information to date is concerned it does not seem at all certain that any of the boreholes put down by the Coronation Syndicate on the Daspoort line, or by Mr. Laurie Hamilton and others, have proved the existence of the Main Reef zone, nor does it appear to have been opened up in any workings of which the data have been published. A large amount of private information, of quite a different kind to that obtained by the persons mentioned, is said to have been acquired by other prospectors; but, whatever it is, it is being carefully concealed.

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Rhodesia Chamber of Mines and Protection of Claims.

At a meeting of the Chamber of Mines held on Tuesday, February 1 (Mr. Ernest C. Pulbrook presiding), the question of the special protection of mining claims during the war was considered. Letters which had passed between the Secretary for Mines on the matter were read, wherein the Rhodesia Chamber of Mines advocated general protection during the war, but the Secretary for Mines stated that the Administration is not of opinion that such a provision is advisable or necessary. After discussion the Executive Committee passed the following resolutions: (1) That this Chamber is not in favour of general protection. (2) That all Rhodesians on Imperial service should receive free protection until three months after peace is declared, and that a further 12 months be granted to them for the purpose of carrying out the current year's inspection work. (3) That

in cases where it is demonstrated to the Government that on account of the abnormal conditions arising out of the war, registered holders of claim licences are temporarily financially embarrassed, the Government should not allow the claims to go to forfeiture pending the duration of the war, or such shorter time if the holder's financial position becomes improved.—*Rhodesia Herald*.

MINING EXAMINATIONS.

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A YEAR OF MINING IN CAPE COLONY AND NATAL.

Points from the Annual Reports of the District Magistrates.

From the annual reports for 1914 of the Resident Magistrates to the Department of Justice, the following are taken:—The Magistrate points out that work on the alluvial diggings in the Barkly West district came practically to a standstill after the outbreak of war owing to the practical cessation of all demand for diamonds, and 2,000 Europeans and 10,000 natives were thus deprived of their ordinary means of livelihood. The loss to the district was a very serious matter, the ordinary output being of the value of over £600,000. Even in normal times the great majority of these diggers lead a hand to mouth existence. They are supported and financed by the storekeepers, who share in what is found and as a result they get deep in the storekeeper's debt and, when they do find stones, the proceeds are used up in the liquidating of these debts. Their condition thus becomes one of virtual slavery and they lose all interest in their work and lack even the energy to break away from this unhappy condition of things. Their children grow up in these demoralising surroundings and ultimately follow the same occupation. The Magistrate thinks that the stoppage of the industry will prove a blessing in disguise if as a result the poorer diggers find other occupations and desert the fields for good. In the Hay district four asbestos mines were worked up to the time of the outbreak of war, when there was a temporary setback owing to the fact that the principal market up to that date was Hamburg. It is understood that a market has now been found in England, where this mineral is used mainly for packing boilers, but also for insertion between layers of steel used on ships of war. In the district of Knysna a few diggers continued to work on the alluvial gold fields, but the whole amount of gold recovered was only 42 ozs., 14 dwts., valued at £155. There were no developments during the year in the lignite fields in the Main Forest or at the copper mines at Elandsdraal. In the Kuruman district the Khosis Asbestos Co. turned out during the year 30 tons of asbestos, valued at £540. A good deal of prospecting was done during the year and one prospector reported that he had found good indications of gold in the Goshose location. It was also rumoured that good indications of diamonds had been discovered. The alluvial fields at Mahura Muthla were deplored during the year. The asbestos found in the district is of good quality, but the cost of transport hampers profitable mining. In the Molteno district two of the existing coal mines were about to close down at the end of the year. In Namaqualand the copper mines turned out during the

year 124,388 tons of copper ore. These mines employed 162 Europeans and 1,405 coloured persons, as compared with 275 Europeans and 1,690 coloured persons the previous year. In the Stellenbosch district a little prospecting for tin was done, but without beneficial result. The Kuils River tin mines continued working throughout the year. In the district of Taung the diamond diggings at Killarney, though they started off very well, dwindled down till they were worked by only a very small community. The few diggers who stuck to this field appeared to be making a living. The total output of the coal mines at the Indwe Colliery in the district of Wodehouse was 36,000 tons as compared with 40,000 tons in 1913. The mines employed 46 Europeans and 413 native males and 68 native females. The Magistrate of Dundee reports that 12 coal mines were at work during the year and preliminary steps for the opening of new shafts were taken. The industry suffered considerably during the strike in the early part of the year and again on the outbreak of war owing to fewer ships calling at Durban for coal. In Eshowe the mineral wealth consisted of one asbestos mine and this at the time of reporting was more or less at a standstill. In the Impendle division some prospecting for oil shale was done, but the Magistrate did not know with what amount of success. In the Klip River division the three working coal mines put out 258,980 tons of coal as against 328,206 tons in 1913. The drop in the output was due to the disappearance of a German shipping company as a purchaser. In Mqofana mining for gypsum continued and held out very favourable prospects. In the Emtanjaneni division of Zululand, a gold mine which was opened up on the farm Nineveh in 1913 was closed down during the year under review. There was some talk of reopening the Vira mine, which stopped work at the end of the year 1912. Prospecting for gold and tin was carried on spasmodically, but less extensively than in previous years. The five coal mines in the Newcastle division passed through a trying year, owing to the industrial disturbances and the war. Their total output for the year was 550,755 tons. There was considerable desultory prospecting for gold in the Ngotshe division, but with no satisfactory results. The Wonder mine was re-opened, but after working for a few months it closed down. The Vergelegen mine also stopped work during the year, notwithstanding that it is stated to be a payable proposition. The Magistrate of Paulpietersburg states that coal of excellent quality is to be found in all the high altitudes of the district and several options over coal-bearing properties had been secured.

Hatting Spruit Collieries.

The seventh annual meeting of the Hatting Spruit Collieries was held last week, presided over by Mr. R. H. Wisely (chairman). The directors' report stated that the nominal capital remained at £75,000, of which £70,000 only had been issued, and £5,000 held in reserve. The properties of the collieries consisted of mineral leases over the farms "Lente Plaats," "Eerste Kuis," "Besterdale," "Rooi Kop" and "Jackhalsfontein." Leases held over the farms "Last Chance" and "Carmarvon" were abandoned after these properties had been thoroughly prospected. The accounts attached showed a profit on the year's working of £11,707 19s. 4d., after making the provision for the payment of income tax. From that had been written off £7,890 5s. 4d., being 10 per cent. for depreciation, and £502 17s. 9d., being 25 per cent. in redemption of the mine development account. There had been an expenditure of £367 17s. 4d. on the purchase of certain new machinery and plant, etc., also £584 1s. 9d. in further testing the company's property. The directors regretted that the above expenditure had not resulted in the discovery of further areas of good steam coal, and that, as previously mentioned, had led to the abandon-

ment of two of the leases in order to save the payment of rent, etc. In view of the small area of good coal now available, which clearly indicated that the life of the mine would be much shortened, the directors were, in the interest of the shareholders, giving serious consideration as to the best means to adopt for dealing with the company's machinery, plant and cash assets when further working would prove to be unprofitable. Owing to the shortage of trucks and fluctuating nature of business during the past year there was a slight decrease (about 5 per cent.) in the output as compared with 1914.

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PRODUCERS OF THE FAR EAST RAND.—III. THE SUB NIGEL.

Big Improvement in Position and Prospects—Larger Dividends in Sight—Work of Re-organization Complete—Favourable Development and Long Life.

No review of interests on the Far East Rand to-day can overlook the attractive possibilities of the Sub Nigel—a producing, dividend-paying property equipped with a modern reduction plant, and possessed of a claim area so extensive as to put the life question outside consideration. Its neighbour on the outcrop, the Nigel, after a useful career of many years, has only lately ceased paying dividends, and from all accounts has by no means yet come to the end of its tether. As Dr. Mellor so clearly shows in his drawing reproduced in another part of this issue, all the rich ore-shoots of the Nigel continue into the Sub Nigel, and the experience of the former property will prove an invaluable guide in opening up the large unexplored areas of the Sub Nigel. As shown by the following table, there has been a steady increase in profits since the remodelled plant got to work in June last:—

1915.	Tons.	Revenue. £ s.d.	Cost, s.d.	Profit, £ s.d.
July	6,570	12,781 38 11	32 11	1,811 5 6
August	6,930	11,931 43 1	32 1	2,198 6 1
September ...	7,210	15,750 43 6	31 3	2,819 7 10
October	7,770	15,119 39 9	29 1	3,231 8 1
November ...	7,180	15,729 42 1	29 0	2,961 7 11
December ...	7,750	16,859 43 6	28 9	3,782 9 9
January	7,580	17,315 16 5	33 1	1,203 10 9
February ...	7,190	—	—	3,715

The tonnage, it will be seen, is being worked up to 8,000 tons per month; and the profits give promise of ranging up to the average for the last six months. The dividend for June should therefore be at least 5 per cent., or a shilling per share, and the mine thereafter promises to pay a steady ten per cent. per annum, or about twenty per cent. on the present share price. Speaking at the Gold Trust meeting the other day, Lord Harris announced that the mine was giving "encouraging indications," and this may mean that the dykes are being successfully passed through, and development in the western area and lower levels is favourable. Whether the grade can be maintained remains to be seen. The ore reserves in sight equal two years' supply to the present reduction works, and the life, on a conservative estimate, may be placed at some fifty years, at the present rate of working. With ore being developed in places equal to the best on other mines of the Far East Rand, the prospects of the property may safely be described as excellent. Speaking at the annual meeting in October last, the Chairman, Mr. D. Christopherson, said:—"The position of the mine generally is such that there is every reason to think that the results for the current year should show a marked improvement as compared with the past year. The new plant is working satisfactorily, and credit is due to the manager and his staff that the change over went as smoothly as it did."

PROPERTY AND FINANCES.

It may be recalled that the report of the directors for the year ended 30th June, 1915, shows the area of the property, on which claim licences are paid, is equal to an area of 1,191,2860 claims. These claims are situated on the farms Varkensfontein No. 217, Droegefontein No. 350 and Noycedale No. 71, all situated in the Heidelberg district. It is estimated by the superintending engineer that the claim area exhausted at 30th June, 1915, amounted to 11,53 claims, leaving 1,152,756 claims still intact, the greater proportion of which have not been exploited. The company also holds six water-rights (of which four are situated on the farm Bultfontein, one on farm Noycedale, and one on farm Varkensfontein), one machine stand, and a 17.39 per cent. interest in the following claims and water-rights taken over from the Central Nigel Deep, Ltd. (in liquidation):—(a) 15,987 claims on the farm Varkensfontein No. 217, and (b) two water-rights on the farms Varkensfontein and Bultfontein. In addition, the company holds the freehold of a part of the unproclaimed portion of the farm Bultfontein, in

extent 608 morgen, 284 s., and 11 a. The working capital expended at 30th June, 1915, was £10,007 in addition to the £10,000 company capital. The company has 98,641 shares, £8,637 11s. 10d. of 10s. shares, £2,575 5d. of 5s. shares, and £2,859 4s. 7d. of 10s. shares, £85,586 18s. 11d. of 10s. shares, and £2,859 4s. 7d. of 10s. shares. The plant, designed to increase the output of the mine up to 8,000 tons per month, was completed and in commission during the last month of the year 1915, and an improved tonnage of 5,950 tons was produced. A 10 per cent. increase was registered during the first six months of 1916, 6,570 tons were crushed, and it is expected that the output would gradually continue to rise until the tonnage of 8,000 tons is attained. The superintending engineer, Mr. D. Christopherson, wrote:—"The fully developed and planned plant, which is 194,000 mine tons, valued at 78,000 £, is a 100 per cent. developed one at some 26,000 mine tons. The plant is assigned, from available information, to produce 8,000 tons. The development work accomplished during the year amounted to 6,243 feet, of which 3,550 feet was in the form of a reef width of 13'000 and 13'000 feet, and 2538 dwts., being a slight increase in the tonnage of the mine value as compared with the previous year. The tonnage milled was increased by 845 tons, and the cost of production was 28s. 11d. per ton, and working costs were 11s. 11d. per ton. The cost of renewals of machinery and plant was 6s. 11d. per ton milled. The declared working profit was 1s. 11d. £10,777 3s. 10d., or 3s. 9d. per ton milled. The working costs are due chiefly to an increase of 1s. 5d. per ton in mining, 1s. 9d. per ton in development, and 1s. 1d. per ton greater than last year by 686 feet, or 1s. 2d. per ton for plant renewal. They were also influenced by the dislocation of work while changing over from the old plant by the withdrawal of 36, or about 31 per cent. of the employees of the mine for active service. From the time of arrival of material on account of distribution of the new plant was not fully completed until last August, 1915. This addition to the reduction works, which was carefully planned with a view to possible future extensions, are giving complete satisfaction, although it has to be mentioned that the old wooden vats comprising the old reduction plant are not in a good state of preservation. The shaft of "C" incline shaft is being continued, and in 12 to 15 months it is expected that the workings of "B" and "D" sections will be connected up with the main shaft in such a way as to give facilities for the production of 12,000 tons. When this shaft reaches the bottom of the 150' shaft, it is proposed to concentrate water there, which will be pumped to the surface by a new electric plant. At the end of the year the percentage of the ore being milled is coming from "D" shaft, where the reef widths and values are 100 to 150 dwts. average.

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APPLICATION OF ELECTRIC POWER TO RAND MINING WORK.—II.

[By J. NORMAN BULKLEY.]

PUMPING.

FORTUNATELY the majority of the Witwatersrand mines are comparatively dry, 10,000 gal. per hour units in duplicate usually being ample to handle all the water. In some sections, however, there are heavy flows, the East Rand Proprietary Mines requiring pumps of 60,000 gal. per hour capacity. Practically all of the pumping plant is electrically driven, there being left in service few if any pumps of the Cornish type. Up to recent years all of the pumps have been of the triplex single-acting plunger type about equally divided between the horizontal and vertical patterns. Recently, however, speeds have been increased up to 60 r.p.m. and more horizontal pumps are used. Heads run from 1,000 to 1,700 ft. Most of these pumps are belted, not geared, to the motors, as experience has shown that the belt drive has lower maintenance cost. The depth of the shafts and amounts of power required makes the cost of shaft cables prohibitive at 500 volts, so high-tension cables are usually taken down the shafts. As high-tension motors, particularly those of moderate size, are unsuited for use underground, step-down transformers are required. Generally a three-phase transformer with oil switch on high-tension side is provided for each motor so no secondary switches are required. These transformers with their switches, etc., are placed in a fenced-off chamber to prevent any danger from the high-tension circuits, only the switch-operating handle and secondary circuits coming outside. A typical arrangement of such a pump station is shown on Fig. 1. The high-tension wiring in the transformer station is all bare copper carried on standard high-tension line insulators, the whole, together with necessary current transformers, switches, etc., being carried on an angle-iron framework so that all wiring can be fitted above ground. This particular station was laid out for 6,600 volts working and motors operated at 110 volts.

Centrifugal Pumps.—The advent of the high-lift centrifugal pump, notwithstanding its lower efficiency, was particularly attractive to engineers on account of its lower first cost and smaller space requirements. Several centrifugal pumping plants were therefore installed. These early plants, however, proved a source of trouble as the necessity of clearing the water of even traces of grit was not fully realized and the settling sumps provided were too small for their work. The experience gained showed what had to be done. The Durban Roodepoort Deep Gold Mining Co. installed a centrifugal pumping plant consisting of two units each handling 375 imperial gallons per minute against a total head of 2,400 ft. For clarifying the water, rim launders were used to take off the water from the settling to the suction sumps. Each of these pumps is fitted with a 550-h.p., 1,500-r.p.m. motor. The East Rand Proprietary Mines also have in service eight centrifugal pumps of 1,000 imperial gallons per minute against 1,150 ft. head each equipped with a 550-h.p., 1,500-r.p.m. motor. So far as the writer knows, both these plants are proving satisfactory.

AIR COMPRESSING.

Air for the central mines of the Rand Mines is supplied by the power company from steam-driven compressors at Rosherville and motor-driven machines at the Robinson Central station. These stations supply about 2,250,000 tons of compressed air per annum. The machines are fully described in other papers. The power company does not supply air to any other than the Rand Mines group. Owing to the bad influence of the compressor load on the load factor when the mine is operated, as is usually done on single-shift, the engineers of the remaining group have preferred, where steam plant was not entirely discarded, to

keep the compressor on steam. The East Rand group operates a steam-driven, central air plant with reciprocating compressors and the Randfontein group operates a similar plant but with motor-driven units supplied with power from its own central station. There are a number of motor-driven compressors in use where there is no steam plant available. All these are of the reciprocating type, as the size of the largest unit, 7,500 cu. ft. per minute free air to 100 lb. does not allow the construction of an efficient turbine machine, the limit of which is about 10,000 cu. ft. free air. Nearly all are direct connected to either synchronous or induction motors, very few being belt driven. Two general types are in use, the vertical high speed and the horizontal low speed, both being compounded. Practically all of the later machines are fitted with some form of plate air valves automatically operated, as these have been found to give better results in every respect than any of the mechanically operated valves.

Governing.—Up to the present no satisfactory method of governing by means of a variable-speed motor has been developed; so resort must be had to some mechanical means with a constant-speed motor. The two methods commonly used are: (1) Throttling the intake; (2) opening an auxiliary governing valve for a portion of the stroke. The first method is, of course, very simple, but throws the entire load on and off the compressor as the throttle opens and closes. Also, the efficiency is not as good as with the second method. With the second method, by properly arranging the valve gear on the auxiliary valve, the compressor may be run at any desired fraction of the capacity with fairly good efficiencies on light load. Both methods work very well in practice.

Air Pressure.—The supply from the stations is at 120 lb. at the station and is calculated to be 100 lb. at the mine column. The usual pressure of the individual mine plants is 80 lb., but there is a decided tendency towards higher pressures.

Meters.—The use of purchased air necessitated the installation of air meters. With the accurate records of air consumed study showed startling variations in the amount of air used per rock-drill shift on the various mines, and further study led to the development of systems for the regular inspection and repair of all drills, inspection of pipe lines and air pressures underground, all of which when summed up had the effect of reducing the air consumption and drilling costs by large amounts.

(To be continued.)

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TRANSVAAL CHAMBER OF MINES ANNUAL REPORT.

Increased Native Labour—Position of Mine Supplies—Health Questions—New Legislation.

THE report of the Executive Committee of the Transvaal Chamber of Mines for the year 1915, is as follows:—

The financial statements attached to this report show that the receipts from all sources amounted to £19,156 9s. 11d., and the expenditure to £19,163 10s., the expenditure for the year exceeding the income by £7 9s. 1d. The sum of £210 11s. 9d. has been written off for depreciation of the Chamber's furnishing and fittings. During the year structural alterations have been made to the Chamber's building, at a cost of £1,267 18s. 6d., the amount being charged to capital expenditure, and at the same time the value at which the site and building stand in the balance sheet has been reduced by £3,000 to £16,267 18s. 6d. The cash balance on December 31st amounted to £7,083 0s. 10d., made up as follows:—Johannesburg: At bank on current account, £735 9s. 3d.; on fixed deposit at bank (including accrued interest), £5,185 14s. 4d. London: At bank on current account, £1,161 17s. 3d. Meetings.—During the past year the following meetings have been held: Meetings of members, 4; meetings of the executive committee, 36. From January 1st to December 31st, 121 meetings of various sub-committees of the Chamber were held, the total number of meetings for the year being 161. Membership.—On December 31st there were 67 ordinary members of the Chamber—viz., Class I., 1; Class II., 18; Class III., 8; Class IV., 39; Special, 1. There were 1 Associate and 6 Honorary Members. During the year 1 Ordinary Member joined the Chamber, and 8 Ordinary Members and 1 Associate Member withdrew from membership.

NATIVE LABOUR.

The returns furnished by the Witwatersrand Native Labour Association, Ltd., show that the following numbers of native labourers were employed by members of the Association, on the last day of December in each of the years 1914 and 1915. These figures, which are merely given for the purpose of comparison between the two dates, include natives in the service of mine contractors, but exclude natives in the employ of members of the Association in the district of Barberton, as well as those at the Breyten, Cornelia and Coalbrook Collieries:—On gold mines, 1914, 164,650; 1915, 209,438. On coal mines, 1914, 8,701; 1915, 9,309. On diamond mines, 1914, nil; 1915, 132. On tin mines, 1914, 573; 1915, 807. On lime works, 1914, 96; 1915, nil. Total, 1914, 174,023; 1915, 219,686. As regards the Transvaal Province as a whole, the total number of native labourers employed in proclaimed labour districts was as follows on December 31st, 1915, as shown from returns furnished by the Government Native Labour Bureau:—Employed on mines and on the various classes of works, i.e., Chemical, Metallurgical, Brickmaking, and other works as defined in Part I. of the Coloured Labourers' Health Regulations Ordinance of 1906, 228,279; other employ, 53,294; total, 281,573. There was a total increase of 47,168 in the number of natives employed at the 31st December, 1915, as compared with the number at the corresponding date in 1914. The average number of natives employed on the Transvaal Gold Mines during 1915 was 205,294, which is 26,007 higher than the average for 1914, and is the highest number employed during any year in the history of the gold mines.

TRAINING OF MALE NURSES.

In the Report of the Native Grievances Commission it was recommended that the position of hospital superintendent be only open in future to persons holding the proper qualifications. The Chamber agreed with this recommendation, and the Transvaal Medical Council, at the instance of the Executive Committee, has decided to institute and conduct the necessary examination, and to grant certificates of competence to the successful candidates. Draft regulations for this purpose under the Medical, Dental and Pharmacy Ordinance (No. 29 of 1904, Transvaal) have been agreed upon by the Transvaal Medical Council and the Executive Committee. The regulations had not been promulgated at the close of the year.

NATIVE LABOUR COMPLEMENTS.

The special Committee appointed to assess the Native Labour Complements of the various mines on a technical basis, referred to in the report of the Executive Committee for 1914, completed its investigations in September, 1915, and the complements as recommended were adopted by the Boards of the Witwatersrand Native Labour Association, Ltd., and the Native Recruiting Corporation, Ltd.

GENERAL HEALTH CONDITIONS ON MINES.

STANDING COMMITTEE ON DUST SAMPLING.

The Dust Sampling Department, which was established by the Chamber in 1914, has now completed four dust sampling surveys of the mines. The importance of systematic scientific testing of mine air for dust is very great, and the work of the dust sampling staff has proved of the utmost utility in drawing attention to the existence of injurious quantities of dust in unexpected places, and in the water used for dust allaying, and in pointing out defects in dust allaying appliances. In December it was decided to enlarge the staff, in order to enable every mine to be visited at least once every two months, and often in particular cases, and in addition members have been recommended to arrange for systematic dust sampling to be undertaken by a mem-

ber of the staff of each mine, the work to be carried out on a uniform basis in co-operation with the Chamber's samplers.

MEDICAL RESEARCH.

The work of research, for which the South African Institute for Medical Research was primarily founded, has been considerably hampered during the year owing to the war, but certain valuable research work has been carried out, particularly an investigation by Dr. Fried and Dr. Lister in connection with pneumonia, and a series of observations by Dr. Orenstein in collaboration with the Director of the Institute, dealing with the prevalence of tuberculosis amongst mine natives.

HEALTH OF NATIVES.

The mortality amongst native labourers employed on mines, members of the Witwatersrand Native Labour Association, Ltd., showed a death rate per thousand per annum from disease only of 16.38, as compared with 14.85 in the year 1914, when the lowest death rate on record was recorded. The accident death rate, which was 3.50 per thousand per annum in 1914, was 3.49 per thousand per annum in 1915.

MINING EDUCATION.

S.A. SCHOOL OF MINES AND TECHNOLOGY. CHAMBER'S SCHOLARSHIP AND GOLD MEDAL.

As a result of the examinations held by the Council and Senate of the South African School of Mines and Technology, the Chamber's Scholarship and Gold Medal for the year 1915 was awarded to Mr. J. W. Lawrie. This student is at present on active service in Europe. Mr. T. C. A. Meyer, the winner of the Chamber's Scholarship and Gold Medal for the year 1914, having been on active service, has not yet started his year of research work.

MINING SUPPLIES.

CYANIDE, MERCURY AND ZINC.

The question of mining supplies has engaged the special attention of the Executive Committee throughout the year. As regards cyanide, mercury and zinc, arrangements have been made under which the supply of these essential mining requirements is assured for the whole of 1916. In view of the large increase in the cost of these articles, particularly cyanide and zinc, the possibility of effecting further economies in their use also received attention, and was investigated and reported upon by a sub-committee of consulting metalurgists, with, so far, however, negative results.

GLYCERINE.

A material reduction has been effected in the proportion of higher grade explosives used on the mines, with the result that the amount of glycerine absorbed in producing the explosives required for the industry has been considerably reduced.

DETONATORS.

The large consumption of detonators in the war has rendered it difficult to obtain the usual supplies of British detonators, but the position was relieved to some extent by a large purchase of American detonators, which have proved fairly satisfactory in use.

ENGINEERING SUPPLIES.

The employment of the engineering resources of the United Kingdom largely on the production of munitions of war has necessitated careful supervision of the orders placed for engineering mining material, in order that only essential supplies should be manufactured. In the case of certain articles, a certificate from the Chamber, or the London representatives of the Central Buying Committee, is required before permission is given for manufacture.

GOVERNMENT MUNITIONS AND INDUSTRIES COMMITTEE.

A Government Committee, termed the "Munitions and Industries Committee," has been appointed to investigate and report upon the extent to which local engineering workshops can satisfy the South African demand for engineering supplies. The committee contains representatives from all the principal centres of the Union, the Chamber being represented by Mr. W. Gemmill.

GENERAL.

In the opinion of the Executive Committee, the industry has reason for congratulation on its position in regard to supplies, and in this connection the Executive Committee wishes to record its appreciation of the facilities given by the Imperial Government for the manufacture of these supplies, and also of the assistance given by the Union Government, the Johannesburg Chamber of Commerce, and the Witwatersrand Commercial Exchange.

SELECT COMMITTEE ON THE WORKING OF THE MINERS'

PHITHISIS ACTS.

In November a Select Committee of the House of Assembly was appointed to enquire into the working of the Miners' Act, 1912, and

the Miners' Phtthisis Act Amendment Act, 1914. The evidence of the Chamber to be submitted to the Select Committee during the Parliamentary recess was in course of preparation at the close of the year.

MINERS' PHTHISIS ACT.

In the *Union Gazette* of March 19th, under Government Notice No. 299, dated March 16th, certain amendments to the regulations of the Miners' Phtthisis Act affecting compensation to native labourers were promulgated. In the course of the year, in the case of the Van Ryn Deep, Ltd., v. The Director of Native Labour, the Chamber tested the validity of these regulations. There were two points at issue: (1) Whether the Director had authority under the Act to sit as a Court or a Judge; and (2) whether the certificate of a medical adviser appointed under the Act, which is required by the Act preliminary to any adjudication by the Director, is final and conclusive. The Chamber's contention on the second point was upheld—namely, that the medical adviser's certificate is not final and conclusive, but may be contradicted by the evidence of other doctors, and the company was awarded the costs of the action.

TRANSVAAL MINERS' PHTHISIS SANATORIUM.

The work of the Sanatorium has proceeded smoothly during the year, and the number of men taking advantage of the Institution shows its continued utility. In December the Board of the Sanatorium recommended that a separate Institution should be provided for men suffering from Tuberculosis plus Silicosis, the present Sanatorium being reserved for men suffering from Silicosis only. This recommendation was under the consideration of the Government and the Chamber at the end of the year.

INCOME TAX ACT, 1915 (ACT NO. 23 OF 1915).

This Act came into force on April 21st, 1915. In this amending Act "taxable income" is defined as income exceeding £300 which has accrued to any person, wheresoever residing, from any source whatever in the Union during the twelve months ended June 30th, 1915. The graduated scale of tax commences at 1s., and increases with each £1 by 1/2000th of 1d. until the taxable income amounts to £24,000 when the rate, according to the scale, is 2s., which rate is fixed for taxable incomes of £24,000 and over. The Act follows the lines of the 1914 Act in so far as the mining industry is concerned, except that holders of debentures in any company which is subject to the Mining Taxation Act are exempt from the payment of income tax on interest from such debentures.

MINING TAXATION AMENDMENT ACT, 1915 (ACT NO. 24 OF 1915).

This Act came into force on April 28th, 1915. Its principal enactment is the provision for a special war levy of £500,000 upon the gold mines. It amends the Mining Taxation Act in certain respects the more important of which are:—(1) The Commissioner is empowered to prescribe, where the profits from the mining of any mineral do not exceed £1,500 on the average, that such profits shall be subject to the Income Tax Act, and not to the Mining Taxation Act. (2) It repeals, in respect of future leases, the provision of the Precious and Base Metals Act, 1908, exempting the profits of mining under a lease, granted under Section 46 of that Act, from the provisions of the Mining Taxation Act. (3) A provision to the effect that the effective value only of the assets of an absorbed company amortisable under the Act by that company are entitled to be amortised by the absorbing company. This provision nullifies to a great extent the favourable judgment obtained by the Chamber in the case of the Union Government v. the Knights Deep, Ltd.

TRADING WITH THE ENEMY BILL.

This Bill was introduced into Parliament towards the close of the year. It has since been withdrawn, and a new one substituted therefor. The Bill is under the consideration of the Executive Committee.

PATENTS.

At the end of 1914 nine applications to which the Chamber had entered opposition were still *sub judice*. In two applications the applicants have been granted extensions of the period, which has not yet expired, in which to decide whether they wish to abandon the applications or not. In three cases the applications were amended to meet the requirements of the Chamber. In two cases the Chamber withdrew its opposition, and in the remaining two cases the applications were abandoned. During last year 62 specifications were reported upon by the Patents Committee: in 51 of these it was decided that no action should be taken by the Chamber; and opposition was entered to the remaining 11. Of the opposed applications, in three cases the applications were abandoned; in four cases the applications were amended to meet the objections of the Chamber; leaving four cases outstanding at the close of the year. In December a draft Bill to consolidate and amend the laws relating to the grant of Letters Patent for inventions and for the registration of Patents, Designs, Trade Marks and Copyright was introduced in the House of Assembly. The Bill was under consideration of the Patents Committee at the close of the year.

MINE EMPLOYEES ON ACTIVE SERVICE.

The Executive Committee decided that in all cases the situations of mine employees in the service of the companies represented by the Chamber, who volunteered with the consent of their employers for service in any Imperial Service Contingent Band by the Union, should be kept open for them. That married men should receive half pay. That a single man with dependants should receive such pay as had been agreed between the employer and the man concerned; and that a

single man without dependants should receive quarter pay. In each case the above payments would be in addition to the military pay such mine employees might receive. In view of the large number of mine employees on Active Service and the arrangements above mentioned, under which the mining companies associated with the Chamber grant allowances to these employees or their dependants, it was considered advisable to arrange with the Defence Department that all casualties amongst these men should be notified to the Chamber. A register of mine employees certified by the Defence Department as being on active service is accordingly kept by the Chamber, and all changes and casualties are duly recorded in this register. Members are thus enabled to trace their employees on active service.

MINE APPRENTICES ON ACTIVE SERVICE.

The Executive Committee has decided that the time on active service should not count towards the completion of apprentices' indentures; the time on active service should count, however, towards the periodical increments of pay of apprentices, and in the case of apprentices proceeding on active service in the last year of their apprenticeship the increments should continue after that year in the same ratio as is laid down in the indentures.

VOLUNTEERS FOR MUNITION WORK IN GREAT BRITAIN.

In August, the Chamber, acting on authority from the Imperial Government, called for 200 volunteers for munition work in the United Kingdom from amongst mechanics on the mines, under an arrangement whereby the men were provided with a free return passage to England and back, their billets being kept open for them. The men required were obtained without difficulty, and have proved most satisfactory workers. Later in the year the Chamber assisted towards obtaining 25 mechanics for the Engineering Corps of the Central African Contingent, and also undertook the testing of some 20 mechanics in the Third Infantry Brigade at Potchefstroom, who had offered to exchange to munition work in England.

BRAVERY OF MINE EMPLOYEES.

It has been the custom of the Rand Mutual Assurance Company, Limited, to recognise, by some suitable presentation, approved instances of bravery in connection with rescue work in the mines. In the course of the year the Executive Committee decided to take over this work from the Rand Mutual Assurance Company, Ltd. In future the Chamber will award a bronze medal to mine employees in recognition of acts of exceptional bravery, and in addition will present the recipient with some suitable gift. The names of the recipients will be inscribed on a Roll of Honour, which will be exhibited in the Council Chamber.

WAGES OF MINE EMPLOYEES.

Arising out of a letter addressed to the Chamber by the South African Mine Workers' Union, in May, demanding an increase in the wages of mine employees, on account of the rise in the cost of living due to the war, a Joint Committee, representing the employers and the employees, was appointed by the Government, on the suggestion of the Chamber, to investigate the question at issue as well as a request put forward on behalf of the mechanics on the mines for modifications of their working hours, and for extra payment for overtime. The Joint Committee, which was under the chairmanship of Mr. H. O. Buckle, arrived at certain recommendations, the principal of which were:—(1) That a special war bonus of 7s. per week be paid to all married white employees (and to single white employees with relatives wholly dependent upon them) who earn £1 10s. per week or less. (2) That as regards mechanics, the maximum working hours, excluding overtime, be 50 hours per week, the wages of such men to be calculated on an hourly basis. (3) That overtime be paid to mechanics at the rate of time and a quarter an additional hour (to be paid for at ordinary rates) being added to all overtime actually worked, except when worked in continuation of ordinary time. The recommendations of the Joint Committee were adopted by the Mines associated in the Chamber, and are in operation.

PAY OF WINDING ENGINE DRIVERS.

In the course of the year the Chamber has received deputations from the South African Winding Engine Drivers' and Firemen's Association and the Winding Engine Drivers' Mutual Protection Society respectively, in regard to certain alleged grievances, and, as a result of the interviews, the Chamber has agreed to their request for an agreement to be entered into dealing with the conditions of work of certificated winding engine drivers, which at the close of the year was in course of preparation.

UNDERGROUND CONTRACT SYSTEM.

On the recommendation of the Executive Committee, the flat contract system for underground mining work on the Rand has been abolished as from June 1st, 1915, on all mines, except those of one group which are no longer members of the Chamber. This decision is with the object of ensuring that all mine employees shall obtain a certain definite daily wage, and is in accordance with the recommendations of the Economic Commission and the Dominions Royal Commission.

HOLIDAY LEAVE FOR MINE EMPLOYEES.

In the course of the year the Executive Committee has established a comprehensive scheme of leave privileges for mine employees (other than officials) of gold mining companies members of the Chamber. Underground employees after one year's service are entitled to 12 working days; after two years' service to 15 working days; and after three years' service to 24 working days.

With regard to surface employees: Reduction Works employees are entitled to 10 working days' leave after one year's service. The leave of winning engine drivers was still under consideration at the close of the year. Other surface employees are entitled to 10 working days after two years' service. The leave for surface and underground employees will be on full pay with a maximum of 20s. per shift.

WATER SUPPLY.

The question of the advisability of carrying out the original scheme for obtaining water from the Vaal River, authorised in the Rand Water Board Supplementary Water Supply (Private) Act, 1911, in the altered circumstances brought about by the difficulty of raising the necessary loan owing to the war, has been under the consideration of the Executive Committee at various times throughout the year. At the end of the year no decision had been arrived at by the Rand Water Board on the subject.

RAND PROFITS COMPARED.

Two Years Working Results.

The profit earning results of the Rand producers in the past two years, working profits being stated to the nearest £100, are as follows:

Company.	Working profit, 1915.	Working profit, 1914.	+ Inc. or - dec.
Aurora West	£44,900	£40,400	+ 24,500
Bantjes Consolidated	11,500	30,700	- 19,200
Brakpan	358,100	283,300	+ 74,800
City and Suburban	249,900	243,500	+ 1,400
City Deep	630,300	406,700	+ 223,600
Consolidated Langlaagte	363,900	318,300	+ 45,500
Consolidated Main Reef	150,300	130,600	+ 19,700
Crown Mines	1,169,900	1,193,500	- 23,600
Durban Deep	55,200	57,900	- 2,700
Durban Roodepoort	29,300	37,800	- 8,500
East Rand Proprietary	661,200	809,800	- 148,600
Ferreira Deep	485,800	619,000	- 133,200
Geduld Proprietary	1168,100	103,000	+ 55,100
Goldenhuis Deep	134,300	130,000	+ 4,200
Ginsberg	45,300	46,100	- 700
Glencairn	27,100	33,500	- 6,400
Glyn's Lydenburg	31,300	49,000	- 17,700
Government G.M. Areas	161,500	—	—
Jupiter	*300	—	—
Knight Central	45,400	42,700	- 2,700
Knights Deep	170,400	167,000	+ 3,400
Langlaagte Estates	166,400	136,100	- 19,700
Luipaardsvlei	31,200	32,100	- 900
Main Reef West	49,500	58,200	- 8,700
May Consolidated	10,800	5,200	+ 5,500
Meyer and Charlton	242,700	265,500	- 22,800
Modder B.	637,200	447,600	+ 189,600
Modderfontein Deep	341,700	—	—
New Goch	95,700	122,200	- 28,500
New Heriot	109,900	120,500	- 10,600
New Kleinfontein	272,700	263,300	+ 9,400
New Modderfontein	710,500	643,400	+ 67,100
New Primrose	71,200	136,100	- 64,900
New Rietfontein	*200	5,600	- 5,800
New Unified	60,700	62,200	- 1,500
Nigel Gold	16,700	31,700	- 15,000
Nourse Mines	145,000	174,300	- 29,300
Princess Estate	6,300	24,300	- 18,000
Randfontein Central	658,900	814,200	- 155,300
Robinson Deep	308,800	320,900	- 12,100
Robinson Gold	500,100	574,400	- 74,300
Rosiepoort United	21,800	14,900	+ 6,900
Rose Deep	285,300	285,400	- 100
Simmer and Jack	352,900	350,200	+ 2,700
Simmer Deep	55,800	48,100	+ 7,700
Sub-Nigel	26,000	25,200	+ 800
Transvaal G.M. Estates	153,900	252,800	- 98,900
Van Ryn	229,700	248,800	- 19,100
Van Ryn Deep	526,200	414,000	+ 112,200
Village Deep	302,100	308,500	- 6,400
Village Main Reef	175,200	350,000	- 175,100
West Rand Cons.	103,100	63,300	+ 34,800
Witwatersrand Deep	213,800	251,200	- 37,400
Witwatersrand (Knights)	300,500	296,300	+ 4,200
Woluter	156,800	133,000	+ 23,800

* Loss. + Including £18,760 gold in reserve.

Mine Ambulance Competition.

SURFACE WORKERS' SHIELD.

The fourth annual competition for the Surface Workers' Shield, presented by the Chemical, Metallurgical and Mining Society, was held under the auspices of the S.A. Red Cross Society, by kind permission of the management, at the Village Main Reef G.M. Co. recently. There was a large attendance, which included Mr. Frank Raleigh, Lieut.

PANAMA PACIFIC INTERNATIONAL EXHIBITION.

The Exhibition was held throughout the year 1915. The Chamber of Mines on behalf of the gold mining industry was awarded a gold medal for its general excellence.

OBITUARY.

The Executive Committee deeply regrets, having to record the death of Sir George Farrar, Bart., D.S.O., who was in service, and a resolution expressing the profound sympathy of the members with Lady Farrar and family was placed on the records of the Chamber. Sir George Farrar rendered valuable services to the mining industry, with which he was connected almost from its inception. He was at various times a member of the Executive Committee and in 1904 was President of the Chamber. The loss to the mining industry through his death is very great.

Colonel H. Temple-Murcell, A.D.M.S., Mr. H. C. Hilton (general manager), Professor J. A. Wilkinson (chairman, S.A. Red Cross Society), and a number of medical men. Five teams competed, representing the Rose Deep, Modder B, Crown Mines, City and Suburban and Luipaardsvlei Estate and G.M. Co., Ltd. The practical test, which involved the treatment of a patient in an awkward position in a bin inside the circular sorting table in the headgear, and his transport from the sorting floor with several sharp turns, and down two stairways to the gate, was as follows:—“A carpenter working on the headgear falls into a bin, and is found lying on his back. He is conscious, and complains of pain in his back. His legs are powerless. There is sharp bleeding from a lacerated wound of the scalp behind the left ear. The patient is to be removed to the gate; but whilst being transported breathing becomes difficult (at a spot to be pointed out).”

The oral examination consisted of each member of each team being required to answer one of the following questions:—

1. What are the symptoms due to the loss of a large quantity of blood. How would you deal with a person in this condition?
2. Describe the first-aid treatment of a wound. Name three common antiseptics.
3. What is the difference between apoplexy and epilepsy? Name any disease you might mistake for epilepsy.
4. How would you distinguish between a dislocation of the hip and a fracture of the upper end of the femur?
5. How would you treat a case of gassing by cyanide fumes?

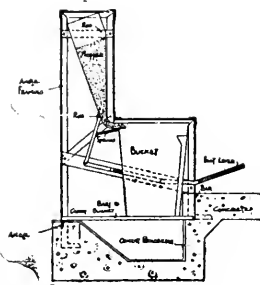
The marks obtainable were 25 for the oral and 135 for the practical; total 160; the final result of the competition being as follows:—

	Oral.	Practical.	Total.
1. Crown Mines	17	124	141
2. Luipaardsvlei	16½	122	138½
3. City and Suburban	13	97	110
1. Modder B	11½	82	93½
5. Rose Deep	11½	80	91½

The Crown Mines were thus successful for the second time in succession, Luipaardsvlei again being the runners-up. The Crown Mines team (Messrs. Edward Thomas King, Montague Henry Hand, Harry English, Alexander Menzies Anderson and Harold English), thus secure the Shield for the ensuing year, silver medals for each member of the team, and the sum of £10 from the Safety First Committee of the Rand Mutual Assurance Co., the Luipaardsvlei team (Messrs. H. J. Hensley, T. Sneddon, R. Herd, P. O'Keeffe and W. Potterton), receiving bronze medals. The City and Suburban team did excellently well for a first attempt. Owing to a large number of first-aid men on the mines having joined the various medical units on service Overseas and in East Africa, a number of mines were unable to secure teams, and both Modder B and Rose Deep suffered by losing men at the last moment, thus preventing the continuous team practice which is essential to success. The competition was a very successful one however, and the teams are to be highly congratulated on their work. The judges were: Dr. T. B. Gilchrist, Dr. H. T. H. Butt, Dr. F. R. Martin, Dr. C. V. Anderson, Dr. R. W. Gibson and Dr. A. E. H. Pakes. The teams and officials were subsequently entertained to lunch at the Mine Recreation Hall, when the judges and officials were cordially thanked for their services.

Improved Sanitation Underground on the Rand.

THE O'BRIEN IMPROVED PATENT DRY EARTH CLOSET SYSTEM.



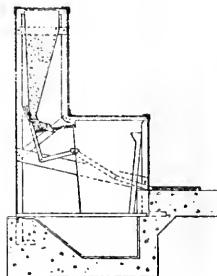
SECTION showing Hopper and Gearing in position of rest, or immediately after foot lever has been released.

The O'BRIEN Premier Dry Earth Closet System has undoubtedly proved itself to be the PREMIER of all dry earth systems, and only requires to be known on the mines to secure its general adoption.

THE PRINCIPLE OF THE SYSTEM IS THE SEPARATING OF THE LIQUID FROM THE SOLID OR FOECAL MATTER, which is done by mechanism inside the pan. The Liquid is run into a chamber under or near the pan, which chamber is partly filled with a chemical absorbent preparation, and combining with the preparation thereby forms A PERFECTLY PURE, ODOURLESS SOLID, or by other means treated and allowed to flow away pure. The foecal matter in the pan is automatically covered with a chemically prepared ash, rendering it absolutely odourless, and can be hoisted to the surface and carted away in open carts during the daytime.

The system itself is far superior to any other dry earth system, and has been largely ADOPTED BY THE SOUTH AFRICAN RAILWAYS and by the NEW SOUTH WALES GOVERNMENT FOR ALL BUILDINGS where no sewerage scheme is in use, also by MANY LEADING PUBLIC GENTLEMEN OF SOUTH AFRICA. In simplicity, cleanliness, and convenience it is far ahead of present practice.

Mr. DITCHFIELD will be happy to enter into Special Arrangements with Mines, Municipal and other Public Bodies, and, on application, will furnish estimates, and, if required, designs for the installation and maintenance of the system.



SECTION showing Hopper and Gearing in position while in use.

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THE WEEK IN THE MINING MATERIAL AND ENGINEERING TRADES.

Mines Still Holding Back—American Money and Its Influence—Trading Under the Limited Company Law—White Lead Admittedly a Bad Colour—Second-hand Material.

BUSINESS on the Commercial Exchange has been very slow indeed this week, as the mines are still holding off. As regards outside orders, these have been checked owing to prices having gradually crept up to higher levels, in fact so high as to make a considerable difference in contracting work. These remarks not only apply to the mines, but throughout the building trade, foundry work, and such like. The price of timber, for example, is increasing, as pitch pine is up threepence per cubic, also long lengths deals are firmer at 1s. per foot, and a merchant in that line, whose opinion should be worth recording, states that he expects it will be nearer 1s. 3d. per foot in a couple of months' time. A mine buyer, in reply to an enquiry for an explanation of the dulness of trade, could not give much of an idea as to any special reason, excepting that the mines are using from big accumulated stocks, and perhaps are awaiting more favourable opportunities as regards values. For instance, there is a tendency for the Americans to cut prices in piping, therefore all holders generally are falling into line as to values. In respect to iron values, the firms controlling the imported article seem to have an understanding, as prices are arranged from time to time, and lists are issued not only for bar and angle iron, but for nuts, bolts, washers and similar goods. Hitherto these arrangements have steadied values without any disadvantage to buyers, as this is such a cosmopolitan market, that competition keeps things from running away. Even in these war times there is very little opportunity to corner anything, particularly as America is making such a big bid for our trade. They would be doing much better than they are, but freights are so heavy that it is not unusual for the freight to be more than the cost of machine tools and machinery coming from New York. The coal industry is not doing any too well, chiefly owing to the shortage of railway trucks, although it was mentioned on Wednesday at a coal company's meeting that the increase in native wages was also a cause for the less profit available. Another point emphasized is one often referred to in these notes, as to the difficulty of obtaining machinery from Britain. Here is the paragraph in full: "In order to cope with the increasing demand for small coal, owing to the introduction into modern power plants of the chain grate stoker, a second crushing plant had been ordered from England, but unfortunately the conditions prevailing there are such that the manufacturers had been unable to make any progress with this plant, owing to the impossibility of obtaining steel." By the way, it was also stated that this crusher was used in providing small coal, which had altogether replaced "pea" coal.

AMERICAN TRADE INFLUENCE.

This was the first newspaper to give information in reference to positive negotiations being in progress between a Johannesburg house and American capitalists. These negotiations have been successful up to a certain point, and the whole question looks very promising towards ultimate results. If perchance the first venture turns out a success and a rich patch of gold reef is struck, then things should hum for a time, not only in gold propositions, but in diamonds, coal, and all base metals, as well as innovations in trade and manufactures. According to the excited proceedings on our Stock Exchange, all these good things are seem-

ingly in a speedy way to accomplishment, but that is another matter. However, to say the least, it does not require much of the spirit of prophecy to read the signs of the times that it will be a great advantage to South Africa for America to take a hand in the development of this great country, as it is certain that Great Britain and the Continent will be busy with their own internal affairs for a long while after the war. At this stage perhaps a word of warning and even advice should be welcome to our own traders, our own manufacturing concerns, and our own workmen. From a broad standpoint, new American capital, new energy, and new ideas should be heartily acceptable in a spirit of friendly rivalry, because it is very much better to rely upon self, rather than expect doles or assistance from an extra paternal Government.

STEEL AND IRON.

The listed prices for steel plates are as follows:—14 in. 10 x 1, 27s.; 10 x 5, 28s. 6d.; 10 x 6, 30s.; 12 x 5, and 12 x 6, 30s. 4 in. and 3-16 in., 10 x 1, 26s.; 10 x 5, 27s. 6d.; 10 x 6, and 12 x 5, and 12 x 6, 28s. 6d. 4 in., 10 x 1, 25s.; 10 x 5, 26s. 6d.; 10 x 6, 12 x 5, and 12 x 6, 27s. A mining material broker states that there are plenty of enquiries for steel, iron, and hardware goods, but it is difficult to complete anything like an assorted order, hence it is a lot of work for very little pay, chiefly caused by the shortage of particular lines which are either difficult to find or cannot be found at all. Nevertheless, it is likely that now there is a cessation of buying from the mines and many ships on the way that the shortages will be pretty well filled by the middle of April. One firm gave this list of ships from Britain now on the water:—Llanstephen, Clan Cameron, Clan Shaw, Bavarian, Sabine, and Muronian. There are also three ships on their way from America, one of which is the Hylas containing 20 motor cars, and much material, hardware, steel, etc.

BUILDINGS AND BUILDING MATERIAL.

Notwithstanding the high price of timber, roofing iron, etc., the building of medium-sized private dwelling residences is quite fair, more particularly in the northern suburbs and in the Parktown-Zoo district. It is stated that speculative building has received a decided check, owing to the high prices ruling for all kinds of material. A builder reports that white lead for which he paid 66s. per 100 lbs. at the beginning of this month, is not so good as usual, being a grey-white instead of a pure white. The paint people were asked about this, and they agree to the soft impeachment, explaining that the war conditions have upset the smooth running at the factories, hence a faulty finish. The plumbers complain of an exceedingly dull time, chiefly owing to lack of real activity in the building trade. Electrical house stocks are fair, with the exception of coils of wire, as 3-22 are unobtainable in Johannesburg. The party who gave this information had an order for 6 coils of 3-22's from a town in the Transvaal and an all-day search throughout Johannesburg was made to obtain same without result up to five o'clock on Thursday.

SECOND-HAND MATERIAL.

A miscellaneous lot of old building materials was received during the week, per rail from Magaliesberg. Most of this was cleared out by farmers who want to build corn sheds.

WANTED.—Antimony Ores ; state price, percentages, analysis, quantities can deliver monthly and points of delivery. Address Manufacturer, Station C, New York, U.S.A.

WRIGHT'S ROPES.

cattle pens, stables, and so forth. More business could be done if only stocks were more assorted. As regards mining material and the like, enquiries are pretty numerous for spares of every kind as well as any serviceable parts of different machinery and the smaller batteries. Fencing wire and poultry wire are both in constant request, so much so that the second-hand yards are stocking new wire when it can be picked up at anything like reasonable rates.

REVISED PRICE LIST.

Approximate war prices, subject to quick change.—Mining and building hardware: Iron, imported, round up to 1 in., 27s. 6d.; 1½ in. to 2 in., 13s. 6d.; 2½ in. to 6 in., 25s. per 100 lbs. Do., square, up to 1 in., 27s. 6d.; 1½ in. to 2½ in., 13s. 6d.; 2½ in. to 5 in., 25s. Plats, 3-16 in., 37s. 6d.; all from ¾ in. up, 25s. Angles, ¾ in. to 3-16 in., 30s.; ½ in., 27s. 6d.; 5-16 in. to ¾ in., 25s., excepting 5 x 4 x ¾ in.: mild steel bar, 3d. lb.; drill, 5½d. lb.; tool, 7½d. to 9d. lb.; steel plates, 10ft. x 4ft. x 1-16 in., 27s.; do., ½ in., and 3-16 in., 26s. 6d.; ½ in. and upwards, 25s.; 10 ft. x 5 ft. x 1-16 in., 28s. 6d.; ½ in. and 3-16 in., 26s.; 10 ft. x 6 ft. x 1-16 in., 28s. 6d.; 3-16 in. x 10 ft. x 4 ft., 26s.; ½ in. up, 10 ft. x 4 ft., 25s. to 27s.; hexagon bolts, ¾ in. to 3 in., 8d. per lb.; over 3 in., 7d. lb.; ½ in. up to 2½ in., 45s.; 2½ in. to 6 in., 42s. 6d.; 6½ in. and over, 40s.; ¾ in. up to 2½ in., 37s. 6d.; 2½ in. to 6 in., 35s.; 6½ in. and up, 32s. 6d.; ¾ in., ¾ in., and 1 in. up to 2½ in., 32s. 6d.; 2½ in. to 6 in., 30s.; 6½ in. and up, 29s. per 100 lbs. Nuts, ¾ in., 9d. lb.; ½ in., 50s.; ¾ in. to 1½ in., 47s. 6d.; 1½ in. to 1½ in., 52s. 6d. per 100 lbs.; 2 in., 7½d. per lb.; washers, ¾ in. and under, 30s., and above that size, 30s. per 100 lbs.; shoes and dies, 30s. to 32s. 6d. per 100 lbs.; rails, £15½ per ton; picks, 4 lbs., 22s. 6d. per doz.; shovels, 32s. 6d. to 42s. 6d. per doz.; hammers, drill, 6d. to 9d. lb.; hammer handles (best American), 14 in., 3s. 6d., 24 in., 5s. 6d., 30 in., 7s. 6d., 36 in., 10s. 6d. per doz.; metal, anti-friction, 1s. per lb.; galvanised iron, 24 gauge, 6 ft. to 10 ft., 9½d., 11 ft. 9½d., 12 ft. 10d.; 26 gauge, 6 ft. to 10 ft., all lengths about 7½d. to 7¾d.; flat galvanised, 18 to 24 gauge, 32s. 6d.; 26 gauge, 34s. 6d. 100 lbs.; floor brads, 27s. 6d.; ceiling, 27s. 6d.; wire nails, 27s. 6d. to 32s. 6d. per 100 lbs.; solder, 50 per cent., 1s. 2d. per lb.; locks, rim, 45s.; mortice, 60s. doz.; barbed wire, 20s. to 22s. 6d. 100 lbs. coil.

Timber: Deals, Baltic, 9 x 3, up to 16 ft., 10½d.; over, 10½d. to 1s. (Oregon, 10½d.); flooring, 4½ x ¾ and 6 x ¾, 5½d. to 5½d. per sq. ft.; do., 1½ x 1½, 6½d. to 6½d.; and 6 x 1½, 6½d.; Oregon edge grain, 5½d. and 6½d.; ceilings, 6 x ½, 3d. to 3½d. per sq. ft.; Oregon, 4 x ½, 1½d.; pitch pine, 6s. 6d. to 6s. 9d. per cub. ft.; Oregon, 5s. per cub. ft.;

clear pine, ½ in. x 12 in., 7½d. per ft.; 1 in. x 12 in., 8d.; teak, small planks, 15s. per cub. ft.; do., large, 16s.; jarrah, 8s. 6d. per cub. ft.; poplar, 1 in. x 12 in., 8d.; scantling, 9 x 3, 10d. to 10½d. per ft.

Bricks, cement, lime, etc.: Cement, nominal, 34s. 6d. per cask; Pretoria Portland, 9s. 3d. per bag; 8s. 3d., truck loads; lime, white, 7s. 6d.; truck loads, 6s. 6d., slacked; do., 5s.; blue, 3s. 6d.; plaster lime, 4s.; bricks at kiln, stock, 35s. to 40s.; wire cuts, 40s. to 50s. pressed, 65s. per 1,000, road transport now normal; salt and white glazed bricks, £27 10s per 1,000; tiles, roofing, £17½ square; glazed tiles, 10s. 6d. to 17s. 6d. yard; paving cement tiles, 8s. 6d. yard laid; terra cotta tiles, £15 per 1,000; reinforced concrete columns, 6ft. plain, 21s. 6d.; fluted, 24s.; fireclay bricks, £9½, good average, per 1,000; clay chimney pots, 80s. per doz.; fireclay, 37s. 6d. ton on rail.

Oils, paints, lead, oxides, glass: Linseed, raw, 30s. boiled, 30s. per 5-gall.; white lead, 65s. to 70s. per 100 lbs.; turpentine, 54s. 2/4 galls.; coal tar, imported, 10s. to 11s. per 5 galls.; oxide in oil, 30s. to 32s. 6d. per 100 lbs.; dry oxide, 21s. to 22s. 6d.; S.A. crude oxide, 12s. 6d.; linseed oil putty, 4s. 6d. per 12½lb. bladders; 30s. casks of 100 lbs.; grease A.F. axle, 23s. 6d. to 25s. per 100 lbs.; tallow, 9d. per lb.; White Rose paraffin, 14s. 6d. 2/5; Laurel do., 14s. 3d.; petrol, 24s. 6d. 2/4; motor oil, 6s. to 7s. 6d. per gallon; lubricating oils, 24s. per case; cylinder, 30s.; paints in tins, 8d. to 9d. per lb., according to quantity, and if ordered to be mixed, 10 per cent. on pre-war rates. British plate-glass, ¼ in., 3s. 6d.; window, 16 oz., 1s. to 1s. 3d. ft.

Chemicals: Mercury, £17 10s. per 75 lb. bottle; bichromate potash, 1s. 6d. lb.; chlorate, 2s. 6d. lb.; permanganate, 7s. 6d. lb.; alum, 9d. lb.; carbolic acid, 5s. 6d. lb.; borax, 66s. 100 lbs.; cyanide soda, 1s. 4d. lb.; hypo, 1s. lb.; acetate lead, 67s. 6d. 100 lbs.; litharge (assay), 57s. 6d., (commercial) 37s. 6d. 100 lbs.; zinc sheets and blocks, 1s. 3d. lb.; plumbago crucibles, 4½ per number.

Electrical Goods: Lamps, high volts., British, Holland & American, 14s. to 21s. wholesale, and 21s. to 27s. doz. retail; carbon lamps, 7s. 6d. per dozen; pure rubber flex, 9d. to 1s. per yard; 3/20 coils of wire, 30s.; do., 3/22, 26s.; tubing, 12s. to 13s. 100 ft.; keyholders, 2s. 6d. each; round blocks, 3½ in., 4s. doz., local; lamp holder cord grips, 15s. doz.; switches, 5 amp., 12s. to 13s. doz.; British glass shades, 24s. to 36s. doz.; Bohemian shades finished; porcelain shackles, 14s. 6d. doz.; do., bobbins, 15s. to 16s. 6d. 100; cleats, 18s. per 100; P.O. insulators, 18s.; motors, 3 h.p., about £30 new.

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HOLDS LARGE STOCKS OF R.S. JOISTS, RIVETS, FIRE-BARS, 71 cwt. RIGBY STREAM HAMMER, C.I. COLUMNS, MACHINE TOOLS, &c. ENGINEERS' enquiries invited for ALL lines of Machinery.

Corner MARSHALL and LOVEDAY Streets, Johannesburg.

WANTED.—Antimony Mine ; state location, character and quantity of ores and full particulars. Address Manufacturer, Station C, New York, U.S.A.

RAND WATER BOARD, JOHANNESBURG.

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THE RAND WATER BOARD HAS FOR SALE A LARGE QUANTITY OF SURPLUS SECOND-HAND MACHINERY AND MATERIAL, including Boilers, Chimneys, Winding and Pumping Engines, Gas Producer Plant, Laere Motor Trolley (18 H.P., 30 cwt.), Pulleys, Pumps of all descriptions, Cast and Wrought Iron Pipe Fittings, Ball Valves and various other articles and material.

Printed Price Lists, giving a full description of the whole of the Plant and Materials for Sale, can be had on application to the Office of the Chief Engineer of the Board.

P.O. BOX 1703, JOHANNESBURG.

THE WEEK IN THE SHAREMARKET.

Increased Activity—More Speculative Counters Favoured—A Broadening Tendency.

The feature of the week is one that can hardly be termed altogether satisfactory, from past experience. Money has unquestionably been made by dealings in Springs Mines, Options, Gedulds, Modderfonteins, and other promising securities. During the last few days, however, this class of stock has been somewhat neglected, with the exception of Gedulds and the Modderfontein trio, which all show appreciable advances. A distinct inclination to gamble has shown itself, preference being shown for low-priced shares of every description, entailing a comparatively small outlay with a high percentage of profit on any appreciable advance. The fluctuations, notably in Knight Centrals, Bantjes, Rand Klips and Lace Props, are sufficient evidence of anything but steady investments on merit. A glance at the list will show the large margin between the lowest and highest in perhaps a dozen formerly unconsidered trifles, in addition to those mentioned above. African Farms have improved slowly and steadily owing presumably to the prospects of Leeuwpoot Tins. On the other hand established propositions, such as Zaaiplaats and Rooibergs present a hopeless appearance to holders, notwithstanding the decided advance in the price of their productions. Enquiries as to the cause lead to nothing. High change on Thursday brought a shake out of speculative stocks, and the wholesale purchasers of Bantjes on Wednesday felt anything but pleased at the sudden drop. Later in the day prices steadied somewhat.

	Friday. 17th.	Sat. 18th.	Mon. 20th.	Tues. 21st.	Wed. 22nd.	Thurs. 23rd.
Af. & Euro. Invest.	2 6*	2 6*	—	—	7 6*	—
African Farms	10 0	10 3	10 9	10 9	11 3	11 2*
Apex Mines	5 6*	5 9	5 6	5 6*	5 6*	5 3*
Aurora West	10 0	10 0*	10 6*	10 6	10 6*	—
Bantjes Consolidated	12 7½	13 0	14 5	14 10	15 6	14 10
Blauwboosch Dias.	—	—	50 0*	—	—	—
Brakpan Mines	—	71 6*	71 0*	72 6	72 6	72 6
Breyton Collieries	—	22 6	19 0*	—	20 0*	20 0*
Brick and Potteries	—	—	5 0*	—	5 0*	—
Bushveld Tins	0 6*	0 7*	0 6*	0 7*	0 6*	0 8*
Cassell Coals	—	20 0*	—	20 0*	—	—
Cinderella Cons.	5 9*	5 9*	5 9*	6 3	6 6	6 6
City and Suburbans	35 0*	35 6	35 6*	36 0*	35 6*	35 9
City Deeps	72 0	72 6	72 9*	74 0	73 6	73 3
Cloverfield Mines	7 11	8 1	8 5	9 2	8 9	8 6
Clydesdale Collieries	—	—	14 9*	14 9*	—	14 6*
Concrete Construction	—	—	2 0*	—	—	—
Cons. Gold Fields	—	—	27 6*	—	—	27 6*
Con. Langlaagtes	30 0	—	31 0*	—	29 0	29 0*
Con. Main Reefs	18 6*	18 6*	19 0	19 6	19 6	19 3
Con. Mines Selection	15 6	—	15 6*	15 6*	16 0*	16 0*
Coronation Colls.	—	28 0*	28 0*	28 0*	29 6	30 0*
Coronation Freshbuds	0 3*	0 3*	0 4	0 4	0 4*	0 4*
Coronation Syndicates	2 0*	2 0*	2 0*	2 0*	—	—
Crown Diamonds	—	—	2 1*	2 6*	2 3*	2 6*
Crown Mines Deb.	£95*	£100†	£100†	£95*	£95*	—
Durban Road Deeps	—	—	12 6*	—	—	—
East Rand Centrals	5 9*	5 11	6 0*	6 6	7 6	7 6*
East Rand Coals	3 7	3 8	4 3	4 5	4 3	4 3
East Rand Deeps	1 7	1 6*	1 8	1 9	1 10	1 10
E.R. Minings	13 6*	16 9*	19 6	20 0	19 0	19 0
East Rand Props.	17 9*	17 0*	17 3*	17 9	18 0	18 0*
East Rand Deeps.	£77½*	£77½*	£77½*	£77½*	£77½*	£77½*
Eastern Golds	1 4*	1 4*	1 6	1 9*	2 0	2 3
Ferreira Deeps	—	—	—	—	—	33 0*
Frank Smith Dias.	2 0*	2 0*	2 1*	2 2	2 2	2 1*
Geduld Props.	37 6	39 0	39 3	40 0a	39 0a	39 0
Glenenirrus	2 0*	—	2 0*	—	2 0*	2 0*
Glenore Collieries	6 9*	—	6 0*	6 0*	6 3*	—
Glynn's Lydenburgs	11 0*	—	11 0*	11 0*	—	11 0*
Govt. Arenas	34 0	33 9*	34 6	33 6	33 0*	33 6*
Jupiters	6 9*	6 9*	7 0	6 9*	6 9*	6 10*
Klerksdorp Props.	1 9*	1 9*	1 9*	1 11	1 9*	1 9*
Knight Centrals	16 7	17 3	17 6	16 7	17 0*	16 11
Kuils Deeps	—	—	22 6†	—	—	—
Lace Props.	5 5	5 9	6 0	7 1	6 9	6 11
Luijpaardsvlei Est.	8 3*	8 0*	7 6*	7 0*	7 3*	8 0*
Lydenburg Farms	8 9	8 9	9 1	9 4	9 4	10 3
Main Reef Wests	8 4	8 6	8 7	8 6	8 9	9 0
Meyer and Charltons	102 6*	102 6*	102 6*	102 6*	102 6*	—
Middelvlei Est.	1 4*	1 4*	1 3	1 4*	1 5*	1 1*
Modder B's	119 0†	117 6*	119 0a	117 6*	117 6*	118 0a

* Buyers. † Sellers. a Odd lots.

	Friday. 17th.	Sat. 18th.	Mon. 20th.	Tues. 21st.	Wed. 22nd.	Thurs. 23rd.
Modder Deeps	117 0*	117 6	117 6*	116 4*	117 6*	120 0
New Boksburgs	—	1 6*	—	1 3*	1 6a	1 7*
New Eland Dias.	12 0*	12 0*	12 0*	12 0*	12 3*	12 6*
New Era Cons.	7 9	8 0	7 9*	8 0*	7 9*	8 0*
New Geduld Deeps	4 0	4 1	4 2	4 2	5 1	4 7*
New Heriots	—	52 6*	53 6a	53 6*	53 6*	53 6*
New Kleinfonteins	29 6*	29 9	31 0a	30 6	30 3	30 6
New Modders	325 0*	—	322 6a	317 6*	318 9*	320 0*
New Rietfonteins	0 9*	—	—	0 9*	1 0	0 9*
New Unifeds	11 3*	11 0*	11 0*	11 0*	11 6*	11 0*
Nigels	8 0*	8 0*	8 6*	8 6*	8 6*	—
Nourse Mines	15 0*	15 0*	15 0*	15 0*	15 6*	15 6*
Pickstone Mines	—	—	—	—	—	5 0*
Potchefstroom Exp.	—	—	—	—	0 3a	—
Pretoria Cement	62 6*	62 6*	63 0	64 0	64 0	64 6*
Princess Estates	—	3 9*	4 0*	1 0*	4 0*	3 6*
Rand Collieries	3 6*	3 3*	3 1*	3 6*	3 6*	4 0
Rand Klips	7 7*	8 0	8 11	9 1	9 4	8 11
Rand Nucleus	1 10*	1 10*	—	2 0	2 3	2 3
Randfontein Deeps	3 9*	3 10*	3 9*	4 0	3 10*	3 11*
Randfontein Estates	11 0*	12 3	13 0	13 9	13 6	13 6
Roberts Victoria	—	9 6*	9 6*	8 6*	—	—
Robinson Deeps	22 0*	22 6*	22 0*	—	22 6*	—
Rooibergs	13 0*	12 9*	13 3	13 0	12 9*	13 0
Rood, Unifeds	7 9*	8 0	8 0	8 1*	8 3	8 6*
Ryan Nigels	2 6*	3 0*	2 6*	—	2 6*	2 6*
Sebas	1 6*	1 3*	—	1 3*	1 3*	2 6*
Simmer Deeps	2 1*	2 0*	2 3	2 3	2 6*	1 9*
S.A. Breweries	—	—	—	—	25 6*	28 6*
S.A. Lands	4 0	3 11	4 3	1 6	5 0	4 6
Springs Mines	53 6	56 0	57 9a	56 6	56 3	55 0*
Sub-Nigels	10 9*	10 9*	10 6*	11 0	10 9*	—
Swaziland Tins	—	—	—	23 0*	23 0*	22 6*
Trans. Coal Trust	60 0	61 0a	62 0	62 0	61 3*	61 0*
Transvaal Lands	—	13 6*	13 6*	15 0*	15 0*	14 9*
Trans. G.M. Est.	23 0†	23 0†	—	21 6*	22 6*	2 6*
Tudors	—	—	1 0	2 0†	2 0†	—
Van Dyks	3 3*	—	—	3 0*	3 0*	3 3*
Van Ryn Deeps	62 6*	63 9	63 9	63 0	63 0	62 6
Van Ryn Estates	40 0*	—	—	—	42 6*	—
Village Deeps	31 6*	31 6*	33 6*	31 6*	32 6*	30 6*
Vogel Con. Deeps	1 7*	1 7*	1 9	1 8*	2 0	2 1*
Welgedachts	15 0*	—	16 6*	16 6*	17 0*	16 6*
West Rand Estates	1 3*	—	1 3	1 4*	1 3*	1 6*
Witbank Collieries	—	—	11 6*	11 6*	11 6*	11 6*
Witwatersrands	—	53 0*	53 6*	53 6*	54 0	55 0*
Wit. Deeps	—	23 6	23 6	23 3*	23 6*	25 0
Wolhuters	10 3*	10 3*	10 6	10 9	10 6*	—
Zaaiplaats Tins	12 6*	12 6	12 6	12 9	12 3*	12 3*

* Buyers. † Sellers. a Odd lots.

ANSWERS TO CORRESPONDENTS.

All inquiries addressed to the Editor must bear the writer's name and full address. We cannot reply to inquiries by letter, but telegrams with replies prepaid will be answered. Correspondents are requested to write their names and pseudonyms distinctly.

"State."—Prospects excellent and steadily improving.

"C. D."—Hold.

"H. W. J. M." (Pretoria).—Next week.

"Constant Reader" (Florida).—Hold.

"E. S., New Reader."—(1) Good, (2) Yes. In neither case has any development been done. Both are still merely prospects.

"A. L." and "E. L. S." (Benoni).—Too late for this issue.

"Geduld."—At the end of September last, it was decided to increase the capacity of the reduction works immediately to enable it to crush 40,000 tons per month. The increase will be so made as to permit of a still further addition at a minimum expenditure and development will be continued at full speed with this end in view. It is expected that the increased plant will be in operation before the end of 1916. The expenditure will not interfere with the payment of dividends. Prospects are excellent.

Company Meetings.

GLENCOE (Natal) COLLIERIES

TRADE REVIEWED.

RESULTS OF 1915 WORKING.

The fourteenth annual general meeting of shareholders of the Glencoe (Natal) Collieries, Ltd., was held at noon on March 17 in the board-room, Stock Exchange Buildings. Mr. A. MacKie Niven (chairman), presided and there were also present Messrs. R. Currie, E. Hyman, Dundas Simpson, James Fisher, B. W. Braysshaw, E. Mansfield, and Mr. Frank Lloyd, secretary, representing 67,898 shares out of an issue of 250,000. The Chairman, in moving the adoption of the report and accounts, said: The year 1915 has been a very unsatisfactory one in connection with the Natal Collieries, the total trade being only 2,071,371 tons, a reduction of 245,294 tons as compared with 1914 and 537,038 tons as compared with 1913. We have to go back to 1909 to find a lower return, the trade of that year having been 1,786,583 tons. This considerable falling off in business is reflected in the accounts submitted, as with most of the collieries in Natal we have a none too rosy statement to put before you.

Financial Features.

The balance sheet shows increases on the assets side under various heads—these again being reduced by the amounts written off as depreciation—the most important being machinery and plant £2,063 1s. 9d., the main items being an induced draught plant to improve the steaming of the boilers in certain winds, and a silt recovery plant to increase the small coal available for sale and steam the company's boilers with waste recovered by this plant. Special attention must be drawn to the expenditure of £5,235 11s.—an amount of £880 of which is represented by your company's share of pitch and manufacturing stores on hand as at 31st of December on a patent fuel works at Durban. These works have been erected in conjunction with the Natal Navigation Collieries, Ltd., to make patent fuel (briquettes), to find a market for the very large quantity of dross made at the respective collieries and for which there is only a regular sale for a small proportion. This dross is made in mining and handling of the coal, and is a very fine fuel, being the brightest and consequently the best coal. It can only be used by a few consumers who have installed mechanical stokers, unless made into briquettes. Much consideration was given to the matter before deciding to erect the works and it is satisfactory to know that the briquettes made from the dross proved to be an excellent fuel for steam and household purposes.

Abnormal Conditions.

Owing to the high cost of pitch and the scarcity of trucks it was necessary to close down the works, and it is not proposed to resume manufacturing briquettes until pitch and the other stores required are normal in price, and the general conditions more favourable. Charges paid in advance, being Indian and native premiums and advances, are

substantially reduced as compared with a year ago. The same remark applies to stores on hand, which stand as £1,807 3s. 8d. Sundry debtors, £5,058 17s. 6d. The greater part of these have been paid since the end of the year and are mainly represented by sales of coal. The investment in East Rand shares and debentures has been realised during the year. The other figures in the balance sheet do not call for comment.

Profit and Loss Account.

The profit and loss account shows an increase in rents received, but the loss of nearly £500 as interest. On the other side of the account there is an increase in charges of £2,255 7s. as compared with £2,879 9s. 10d., the explanation being that insurance is heavier owing to larger payments under the head of employers' liability insurance and increased bank exchange and interest charges, which is explained by the higher rates of exchange paid on drafts on ship-owners for coal sold, and bank interest, as the company was in the first part of the year indebted to its bankers. Directors' fees are lower by £121 15s., while depreciation has been increased by £567. The profit from coal account is £10,970 6s. 8d. compared with £16,202 7s. 6d. as at 31st of December, 1914. This falling off is mainly the result of the very small sales during the first period of the year, and the consequent heavy working costs on smaller outputs, the standing charges at the mine and offices having to be spread over the lower output figures. "On cost" charges are for the most part fixed and do not materially vary whether the output averages 10,000 or 20,000 tons monthly.

High Working Costs.

Working costs have also been high because of the thorough overhauling and reorganisation of the mine underground which has been in progress, rendered necessary by the need for improved ventilation as the mine workings advanced. In appropriation account the amount of £3,717 4s. 5d. has been written off, as special expenditure, although some of it is of a permanent character, notably £1,471 13s. 1d., spent on brick stoppings build in cement to replace inferior stoppings put in some years ago which have proved to be inadequate. Included in this amount is £1,237 9s. 3d., the actual direct expenditure incurred on account of the fire referred to in the reports. The indirect loss incurred was, of course, much more, as not only was coal working stopped for some days, but the working of the colliery generally was disorganised for a time, and the increasing monthly output of a subwork. The balance carried to appropriation account is £4,490 2s. 2d., and the balance carried forward is about the same as last year, being £14,188 12s. 8d., as against £14,037 8s. 9d.

Results in Prospects.

Shareholders will naturally want to have some idea of what is likely to be the result of the present year's operations, and I am glad to be able to forecast a much better year, based on the returns for January and February and the outlook generally. The results for January and February have been:—January: Output, 13,712 tons; profit, £1,800. February: Output, 14,832 tons; profit, £2,000. And March promises to be better than either of these two months. For some time to come the demand for coal is likely to exceed the supply, and your profits should improve considerably on the above figures. These

exceed the profits made monthly towards the end of 1915 mainly because we have been able to secure rather better prices for the shipping trade during 1916, but we look for increased profits per ton because of larger tonnages, which a greatly improved labour supply will enable us to put out, and because of reduced working costs, which the improvements effected underground as a result of the special expenditure incurred during the last two years should now bring about.

Factors in the Position.

On the other hand, it should be pointed out that the present abnormal demand for coal in Natal is the result of the closing of the Panama Canal, and the increased number of steamers taking the Cape route, owing to the presence of enemy submarines in the Mediterranean. At any time many of these steamers may revert to their old routes. Should this come about, the demand for bunker coal will fall off considerably, and while even in that event I have no doubt that you shall be able to dispose of all the coal the colliery can put out, some of it may have to be disposed of as export coal, the prices for which are not quite so good as we get for coal sold as bunkers. At the moment there is no sign of any falling off in the demand, and to avoid delay to steamers calling for bunkers the Government has been obliged to refuse permits for cargoes of export coal, except to special markets where Imperial interests are likely to be affected if the supply of coal is restricted.

Good Prospects.

Certainly at the moment, taking a not too sanguine view of the company's position and prospects, I think we may look forward to a very good year's trade and very good profits. Out of these profits some provision will have to be made for capital expenditure, as a new air compressor with about double the capacity of the old compressor is being installed. It has been bought at a very low price, and is considered to be almost as good as new and is estimated to cost, erected, with house, under £3,500. This purchase was necessary, as the old compressor was working over its capacity, and had a serious breakdown occurred work at the mine would have been stopped for some time. The installation of this new compressor will enable us to cut a larger proportion of coal by machines, and to get rounder coal than is got by hand labour. In other directions there will be some money to be spent, but it is hoped to keep capital expenditure, including the item for the compressor, under £5,000, while special expenditure should not exceed £1,000 for the year. As I have already said, the prospects for 1916 are as much better than at one time seemed probable that we should, after providing for capital expenditure and a reasonable cash reserve for future contingencies, be able to recover a part of the dividend-paying companies at the end of the year.

Natal's Trade.

May I refer in some detail to the condition of the Natal coal trade generally, and give you the usual comparisons with other years. As already mentioned, the output from all collieries was 2,071,371 tons, a reduction of 245,294 tons as compared with 1914:—

	1913.	1914.	1915.
	Tons.	Tons.	Tons.
Tonnage—bunker	1,080,208	1,070,990	831,074
Tonnage exported by sea	615,550	372,848	385,074
Tonnage exported by sea to Cape ports	300,070	163,624	188,836
Tonnage exported by sea to foreign ports	315,980	171,413	196,238

	1913. Tons.	1914 Tons.	1915 Tons.
Tonnage exported overseas, consumed in Province or in stock	451,145	453,620	468,849
Tonnage consumed by Natal Railways and Harbours	413,764	415,299	386,359
Number of vessels calling for coal only	465	499	341
Tonnage of coal taken by vessels for coal only	388,570	449,160	336,000
(These steamers take an average of 960 tons each.)			
Tonnage dealt with by coalizing appliances	1,124,379	961,790	780,365

Abnormal Conditions.

The abnormal conditions prevailing account for the reduction in coal supplied to steamers for bunkers and for the reductions under other headings, when it is remembered that only 983 vessels called at Durban during 1915, as against 1,277 in 1914, a reduction of no less than 294 vessels, and that practically the whole of this shortage occurred during the first half of the year, the reduction of outputs and difficulty of carrying on will be appreciated by all. One company, and probably others, found their difficulties so great that they discharged a considerable number of their native employees.

During the second half of the year a considerable improvement occurred, and the number of steamers about equalled the number calling in 1914. The improvement is explained by the fact that some 100 steamers called for bunker coal owing to the closing of traffic through the Panama Canal. Government transport, Japanese and Dutch steamers, in addition to those mentioned, are now making use of Durban as a port of call, which explains the great demand for coal at the present time. Owing to the war coal has been sent to quite a number of new markets, and satisfactory reports are being received with regard to it. The Egyptian railways and South American railways are taking considerable quantities, and cargoes have been sent to ports at which Natal coal has hitherto been unknown. Some of these markets may be retained after the war.

Rolling Stock Shortage.

There has been during the year under review the usual trouble with regard to shortage of rolling stock. The storage bin had to be used on no fewer than 220 occasions, an increase of 41 as compared with 1914. The tonnage dealt with on these occasions was equal to 40 days' output of the colliery, which but for the bin would have been lost to the company. Furthermore, the mine stood equal to 63 full days as against 20 days during 1914, owing to shortage of rolling stock. One must be fair to the Railway Administration, and remind you that much of this shortage occurred during the first part of the year, when the demands of the South-West campaign were so heavy, that thousands of trucks found their way to the Western Province, where they remained under load, owing to congestion of traffic for weeks and months; but since the conclusion of that campaign the mines have again and again been put to serious inconvenience and great loss, owing to insufficient supplies of empty wagons. The Government would appear to endeavour to cover up their own failure to keep the industry going regularly, whether the reason be shortage of trucks or locomotives (the latest reason given), by submitting to Parliament figures showing that the shipping trade in coal is an irregular one, and that the demand on the Department's rolling stock is therefore not constant. Incidentally, one might be pardoned referring to the fact that the Minister, replying to a discussion on this evergreen subject, submitted a set of figures to the House of Assembly which he, judging by the newspaper reports, did not understand, there being some doubt as to whether they had reference to days, weeks, or months! What

is so apt to be forgotten is that a shipping trade in coal is of necessity to some extent an irregular one, that few steamers arrive with the approximate punctuality of the South African Railway trains, that the shipping trade in coal has been built up by the coal companies and the producers of the Government with a full knowledge of this somewhat irregular demand. It is largely due to shipowners knowing that a supply of coal always on hand in trucks, ready to give their steamers quick dispatch, that Durban has become such a popular coaling port.

Sympathy with Transvaal.

I have the greatest sympathy with the views expressed in a recent letter to the Press, signed on behalf of the leading Transvaal colliery companies, in which it is pointed out how crushing the handicap on the colliery operations is, owing to this long-standing grievance. The signatories point out that when military demands on the railways were abnormal they made no complaint, that this is no new cause of complaint, but a trouble that has existed for many years, and they plead that a permanent industry on which the profitable working of the whole railway service of the country so largely depends is entitled to more consideration than it has received in this matter in the past. It is to be hoped that when the Railway Estimates are under consideration this matter will be fully ventilated in Parliament, and sufficient rolling stock be placed on order as will provide for all reasonable requirements of the industry. Toward the end of the year Mr. L. D. Normand resigned his position, owing to a breakdown in health. He has been succeeded by Mr. S. R. Campbell, who has had very considerable experience in coal mining in Scotland. I will conclude by expressing my appreciation of the work done by the staff at the mine and Point office during the year.

Brighter Outlook.

Mr. Dundas Simpson, in recording, said:—My arrival in South Africa I have availed myself of the opportunity to pay frequent visits to your mine, and to become thoroughly acquainted at first hand with its general equipment and methods of working. From my own observations, therefore, I can fully endorse our chairman's remarks as to the absolute necessity of the capital expenditure which is now being incurred by the board. The Glencoe being what is termed a "dry" mine, the problem of keeping it well supplied with native labour of good quality is more than usually difficult. On this account it seems to me particularly essential that the company should avail itself as far as practicable of mechanical substitutes for unskilled workers. The new and more powerful compressor which is being installed will be of great service in this direction. It will enable us to make use of coal cutting machines to a greater extent than is possible with the present plant, and consequently to dispense with a considerable number of underground "boys." Other effects of these appliances will be to increase the percentage of marketable coal per ton of output, and especially to place us in a position to deal with larger outputs, and thus to secure the greatest possible revenue from favourable trade conditions. Then there is the important question of working costs. This is a matter to which your board has been giving a great deal of thought and attention, and we are hopeful that the improvements now being effected, joined to the efforts of our new manager, will avail to bring about a substantial reduction in mine costs and a corresponding increase in profits. Under all the circumstances, and in view of the good demand existing for coal, I believe shareholders—of whom I am one of the largest—may look forward to receiving a better return on their capital in future than has been the case in recent years.

The report and accounts were adopted.

Messrs. Aubrey Heyman and Dundas Simpson were re-elected directors, and Messrs. Herbert Robins and H. D. Jamieson were reappointed auditors.

APEX MINES.

COAL WINNING PROFITS.

The annual meeting of the Apex Mines, Ltd., was held in the National Bank Buildings on March 22 under the chairmanship of Colonel W. Dalrymple. Those present and represented by proxy included Messrs. E. H. Read, G. C. Fitzpatrick, W. J. Gau, J. E. Grierson, F. E. Scriven, and G. W. Aiston (acting secretary).

In moving the adoption of the report, Colonel Dalrymple said:—

In moving the adoption of the reports and accounts before you to-day, I will commence by drawing attention to a few features in the accounts. The profit on coal winning for the year was £20,534, compared with £20,531 for the preceding year, and our output was 195,180 tons, compared with 165,640 tons in 1914. It will thus be seen that for the year under review the profit per ton was less than for the preceding year, due to the greatly increased proportion of fine coal disposed of, and to the spasmodic nature of the demand for our coal. To the profit on coal winning must be added the dividends received from the New Kleinfontein Company, amounting to £15,000 and sundry interest, rents, etc., the net amount of which latter, after allowing for certain expenditure, was £1,454. The balance brought down from last year was £31,422, thus the total amount to be dealt with in the appropriation account was £68,410. Of this amount £1,636 was appropriated to meet Government taxes for the year, £1,000 was paid as special remuneration to the directors on payment of dividends, in terms of the articles of association.

Dividend Absorption.

The dividends amount to £45,000, leaving a balance of £20,774 carried to the balance sheet. As regards dividends, 5 per cent. was declared in June last, and for the December dividend, as there no longer appeared to be the necessity of carrying the large reserve of cash which we had accumulated, your directors decided to pay 10 per cent. You will recollect that this accumulation of funds was necessitated in the first instance by the closing down of the gold section, and subsequently, after the sale of that section to the New Kleinfontein Company, by the desire of the board to maintain a cash position which would enable the company, as such, to take the fullest advantage of any new issue which the New Kleinfontein Company might make. After that company had abandoned the idea of making the issue, your board decided to distribute your holding in the New Kleinfontein Company to shareholders, and in consequence the cash which had been held up on that account was rendered available for distribution.

Taxation for the year shows an increase of approximately £300, due mainly to the increased scale of the income tax for the year 1914-15. In the balance sheet there is nothing calling for special comment. There has been no capital expenditure during the year, and the only item estimated for in the present year is an additional coal crusher, at a cost of approximately £1,250.

OUTPUT FIGURES.

I have referred to the increased quantity of fine coal included in our output for the

year 1915. You will see on reference to the manager's report that the output of round coal fell off by approximately 15,000 tons during the year, while that for nuts increased by 2,000 tons. The company ceased to produce what is known as pea coal when the crusher commenced operations, crushed coal taking the place of that class, and it will be seen that the output of crushed coal for the year 1915 nearly doubled that of pea coal for the preceding year, while the output of duff was 36,000 tons as compared with 6,400 in 1914, or nearly six times the quantity. This large increase in the output of duff is due to the fact that very little of that class has been dumped during the year, whereas for the year 1914 we were practically unable to sell it.

SATISFACTORY DEVELOPMENT.

Development during the year has been satisfactory and represents 16.2 acres available for mining purposes, as compared with 14.1 acres developed during the preceding year. In order to cope with the increasing demand for small coal, owing to the introduction in modern power plants of the chain grate stoker, we have ordered a second crushing plant from England. Unfortunately the conditions prevailing in industrial works at Home are such that the manufacturers, when last we heard, had been unable to make any progress with this plant, owing to the impossibility of obtaining steel.

In accordance with the undertaking made at last annual meeting the directors reviewed the position of this company as regards the distribution of the share holding in the New Kleinfontein Co., and as a result, a special meeting of the shareholders was called for the 19th of November last, at which it was resolved that the shares should be distributed amongst shareholders and this resolution was confirmed at a further meeting on the 11th of December. The sanction of the Court for the proposed reduction of capital was in due course obtained and in the early part of January the shares were distributed and the capital of the company reduced to £150,000, in shares of the nominal value of 10s. each. Following immediately on your last annual meeting a special general meeting was held at which resolutions were passed reducing the fees of the directors, as laid down in the articles of association. The resolution was confirmed at a subsequent meeting, and for the past year the directors' fees have been paid on the reduced scale. The various war funds inaugurated for the relief of distress and for the supply of comforts for the troops have met with liberal support from the employees of the company who, since the commencement of the war to the 31st of January last have contributed £525 to these funds by means of voluntary deductions from the pay roll. In view of the number of white employees on the property I think this contribution reflects a very creditable average. The thanks of the company are due to the manager, Mr. J. R. Thom, and the staff for the good work put in by them on the company's behalf during the year under review. I now move the adoption of the report and accounts before you and the confirmation of the directors in declaring interim dividends Nos. 18 and 19.

The report and statement of accounts were adopted without discussion.

ANGLO-FRENCH COAL.

EMPLOYEES' PATRIOTISM.

The annual meeting of the Anglo-French (Transvaal) Navigation Coal Estates, Ltd., was held in the boardroom, National Bank Buildings on March 22, Col. D'Almeida being the chairman. There were present and represented by proxy Colonel W. H. D'Almeida, E. H. Read, W. J. Gau, J. E. Grevson, Colonel G. Sandilands, F. E. Scriven, Colonel C. A. C. Tromer, J. A. I. Gibb, C. W. Southwood, M. A. Zoc-

cola, and G. W. Austin (acting secretary).

In moving the adoption of the report the Chairman said:—We have now to consider the report of the directors for the year ended 31st December, 1915, together with the audited statements of account covering the same period. It will be seen from the accounts that the net profit on the year's work was £23,101, and this, together with £6,539 brought forward from the previous year, has been dealt with as follows: Dividends on preference shares, £15,000; amount provided for extension of plant, depreciation, etc., £3,000; taxation, £2,078; leaving a balance carried forward to 1915 of £9,582.

The output for the year was 349,353 tons of marketable coal, this being 32,932 tons in excess of that for last year. I am sorry to say, however, that against this increase we have to record a decrease of £263 in the profit earned, for which disappointment we have again to hold the shortage of trucks on our railway system as principally to blame, although the disorganisation of our shipping, due to the war, and the increase in native wages have also to bear their share of the responsibility.

In August last this company participated with other Witbank collieries in an offer—which was accepted by the Imperial Government—for 100,000 tons of coal, free at the pit-head. Other donations of smaller amounts have also been made to the Union Government. It will be seen from the accounts before us that this company's proportion of these donations for the year represented an outlay of £390.

Capital Expenditure.

Capital expenditure for the year amounted to £6,291. This expenditure includes a new ventilating fan and the partial sinking of a shaft to be used in connection therewith. The fan is a powerful double inlet Sirocco, having a diameter of 91 inches, and when this shaft is completed our arrangements for ventilation should be sufficient to meet the requirements of the mine for many years to come. It has also been found necessary to supplement the power supply in order to provide against emergencies and breakdowns, and this has been effected by the purchase of a second hand-generating set, capable of putting out 250 k.w. This will meet all our immediate requirements, and should leave a substantial margin. You will see also from the general manager's report that it has been necessary to add to the housing accommodation, both for whites and natives, during the year. This matter has been before us for some time, but for financial reasons the work has been postponed as long as possible.

The capital expenditure programme for the present year includes the completion of the ventilating arrangements, and the erection of the electric generator set, and also the erection of two further staff quarters, the total amount to be spent for the year under these headings being £2,330. This should complete the capital expenditure for some time to come, assuming that our monthly output does not exceed, say, 35,000 tons.

The dividends on preference shares declared during the year have again made a substantial inroad into the unpaid balance of accumulated dividends due on these shares, and at the close of the year this stood at £6,730. In dealing with this question last year we hoped that these arrears of interest would be liquidated before the end of 1915. This is still possible, but owing to the bad times through which the coal industry is now passing I think it more likely that the early part of next year will be reached before we are free from this liability, the liquidation of which during the current year would require the payment of a dividend of something over the 12½ per cent. on the preference shares which we have managed to maintain for the last two years.

Government Taxes.

Government taxes show an increase of approximately £700 as compared with last year's figures, due to the increased scale of the income tax imposed for the year 1914-15. Negotiations have now been

concluded with Mr. De Wet, the owner of the freehold of the farm Blaauwkrantz, whereby our lease of the north-eastern portion of the farm has been extended for a further 49 years. The original lease was for 50 years, dating back from 1896, and the extension was necessary, as on the present scale of work the period would have proved insufficient to exhaust the coal underlying the farm.

Men on Active Service.

In order to give such assistance as was possible to the recruiting authorities in connection with the Overseas and East African Contingents, your company undertook to pay a proportion of the wages of a limited number of men who might wish to enlist for active service. We have permitted nineteen men to enlist on these terms, guaranteeing their positions on their discharge from military service, and the monthly amount paid to their dependents on this account is £70.

You will notice on the first page of the report that Mr. L. McEwan is shown as being the manager at the mine, and I am sure you will be glad when I tell you that this is not a new manager, but our old friend Mr. Shearer, who for family reasons has found it desirable to change his name. To Mr. Thom, our general manager, Mr. McEwan, and the staff our thanks are due for the able manner in which the affairs of the company have been managed throughout the year.

Although it is not a matter which concerns the administration of your company's affairs, I feel that I cannot allow to pass this opportunity of drawing attention to the generous manner in which the employees of the company have supported the many patriotic funds raised for the relief of distress, etc., in connection with the war. From August, 1914, to January 31 last the European employees of this company contributed by voluntary deductions from their wages a sum of £675 to the funds in question, and in view of the number of white men employed on the mine I am sure you will agree with me that this is a generous contribution.

I now move the adoption of the report and accounts before you, together with confirmation of the action of the directors in declaring interim dividends Nos. 10 and 11, payable to the holders of preference shares.

The report and statement of accounts were unanimously adopted.

KOFFYFONTEIN ESTATES, LIMITED.

The annual ordinary general meeting of shareholders in the Koffyfontein Estates, Ltd., was held on March 15th at 49, Main Street, Kimberley. In the absence of Mr. D. J. Haarhoff, Mr. J. J. Coghlan presided.

On the motion of Mr. Weatherby, seconded by Lieut.-Colonel Harris, the directors' report, together with the balance-sheet and profit and loss account, were taken as read.

The directors' report was as follows: Your directors have pleasure in submitting their annual report with statement of profit and loss for the past year. The revenue for the year amounted to £6,532, the expenditure for the year amounted to £2,179 18s. 3d., showing a gross profit of £4,352 15s. 9d. The following distribution has been made to shareholders: Dividend No. 49, June 30th, 1915, 20 per cent., £5,680. (Paid partly from accrued profits.)

Waterworks.—Owing to early rains and minimum consumption the weirs are full.

General.—The revenue has fallen off considerably, the temporary reductions in stand rents and water supplied having been continued, and as the Koffyfontein Mines have been shut down, floor rents have been rebated and the consumption of water by the mines has been reduced to a minimum.

In order to relieve the distress prevailing at Koffyfontein, owing to the war in Europe and the recent rebellion, the sum of £500 has been donated to the Koffyfontein Municipality, which has been expended in relief works and local improvements.

The retiring directors are Messrs. C. E. Nind and E. C. Lardner Burke, who retire by rotation, and are eligible for re-election. It will be necessary to elect two auditors for the current year.

Chairman's Speech.

Mr. J. J. Coghlan, in moving the adoption of the directors' report and balance sheet and profit and loss account, said that it was not necessary to say very much with regard to the affairs of the company, as the shareholders had the financial statement before them. As they knew, they were still passing through very severe times. The war was continuing, though things were looking a little brighter all round, and they were hoping that prosperity would soon return

both to the mine and the company.

The shareholders would note from the directors' report that general business had fallen off considerably. The temporary reductions whereby the company was foregoing 50 per cent. of its water and 25 per cent. on water were being continued, and they were pumping water at virtually a little more than cost. But, as he said last year in addressing the shareholders, the company's interests were locked up with the interests of the mining company, seeing that their chief revenue came from the mine, and therefore it was their duty to help the mining company in every way possible. They had made the latter a concession of a reduction of half the floor rents, and what they received in the way of payment for claim rents or licences they loaned to the mining company. It would also be noticed that the Estates Company made a donation of £500 to the Municipality for the relief of distress prevailing in Koffyfontein, and in addition to this the Municipality made a grant of £500, so that £1,000 had been spent on work car-

ried on for the relief of the distress. As shareholders of the mining company had reserved their operations on a reasonable scale, and that also would help the situation. He did not think he could say any more regarding the financial position of the company, which was reflected in the balance sheet and profit and loss account before the meeting. The directors only hoped, if things continued as at present, and the company received dividends from investments, that they would be able to declare a dividend during the present year. They had every hope, on the present outlook, of being able to do that. He would only add that the interests of the company were being strictly conserved by the directors. They had to meet the conditions in a fair and reasonable spirit, which had been their policy all along.

The Chairman invited questions, and none being forthcoming.

Mr. H. Seelhorn seconded the adoption of the directors' report and the financial statements.

The motion was carried unanimously.

Pilgrim's Rest Activity.

The battery of the Bette G.M. Syndicate, at Clewer (Mr. Jan Jager's mine) started crushing last Friday, says the Pilgrim's Rest paper. We learn on reliable authority that the farms Finsbury and Dientje will be proclaimed at an early date as open for pegging. Good reports reach us of the progress of the New Frankfort Syndicate mine at Frankfort, which is controlled by Mr. A. Seryngeour. The rumours resulted in renewed pegging operations in Frankfort, many claims being pegged in the same zone. The development in the Georgian mine continues to expose a good body of ore combining good payable values. The battery is now working and the returns to date have been satisfactory.

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Declaration of Dividend No. 27.

A DIVIDEND of Twenty-two and One half (22½) per cent. (i.e. 6d. per £1 share) has been declared by the Board for the period ending 31st March, 1916, payable to Shareholders registered in the Books of the Company at the close of business on 31st March, 1916, and to holders of Coupon No. 27, attached to Share Warrants.

The Transfer Books will be closed from the 1st to the 7th April, 1916, both days inclusive.

It is intended to post the Warrants in payment of this Dividend on or about 4th May, 1916, but irregularity in the mail service may render it necessary to defer the posting by one or even possibly two weeks. Warrants despatched from the London Office to persons resident in the United Kingdom will be subject to a deduction of English Income Tax, and those despatched to persons resident in France will be subject to a deduction on account of French Transfer Duty and Income Tax.

Coupon No. 27, attached to Share Warrants, will be payable on or after 5th May, 1916, at the London Office of the Company, and at the Credit Mobilier Français, 50 and 52, Rue Tailbout, Paris. Coupons must be deposited FOUR CLEAR DAYS before being paid.

Coupons paid by the London Office, unless accompanied by Inland Revenue Declarations, will be subject to a deduction of English Income Tax. Coupons paid by the London Office to or on account of persons resident in France and those paid by the Credit Mobilier Français will be subject to a deduction on account of French Transfer Duty and Income Tax.

By Order of the Board,

RAND MINES, LIMITED, Secretaries.

S. C. STEEL, Secretary.

Head Office: The Corner House,

Johannesburg, 21st March, 1916.

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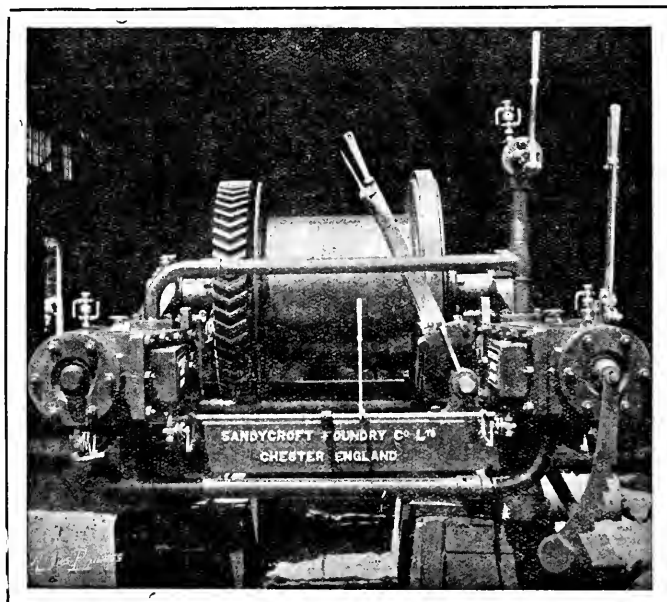
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Engineering Notes and News.

CIVIL ENGINEERING IN SOUTH AFRICA.

Importance of Economical Methods— Interesting Presidential Address by Professor Snape.

THE inaugural meeting of the South African Society of Civil Engineers for the 1916 session took place last week, when the newly-elected President (Prof. A. E. Snape) delivered his address. In the course of his address Prof. Snape said:

A glance back on the struggles of early civil engineers in South Africa should soften any bitterness we may feel at present. This country has had its ups and downs, and in them civil engineers have suffered. In looking through the Cape Archives I found that the first official with the title of civil engineer was Mr. H. W. Reveley, who entered on his duties in January, 1827. Mr. Reveley was appointed at a salary of £500 per annum under authorisation of the Colonial Office, London, by Mr. John Rennie, the famous civil engineer and one of the founders of the Institution of Civil Engineers. He was told that living was much cheaper at the Cape than in London, whereas he found it dearer, and within six months his salary was withheld by the Governor owing to his delay in sending in his monthly reports. He complained of shortage of staff, but all of no avail, for in November of the same year he was informed that the Governor would dispense with his services. In spite of a long memorial, he had to give up his office in May, 1828, so that he only served 18 months. Into the justice of this action I cannot enter.

BOOM OR DEPRESSION.

We always seem to be in a boom or a depression in this country, and the civil engineer is too often looked upon as someone to be taken on and dispensed with at pleasure. It cannot be denied that our status is not what it should be. This may be due to mistakes in the past, but it means that our best helpers are ourselves. It is our business to make ourselves indispensable. Perhaps a little introspection will do no harm. Engineering practice has arisen out of rule-and-thumb methods. It means that specialism has been employed in the study of materials and operations. Telford and McAdam became engineers when they scientifically studied road construction which, previously, had been a haphazard operation. Thereby they economised through producing a better road with a longer life. Less animal power was necessary for vehicles and everybody benefited. In the same way, canals and railways came into being for economical reasons. Every development of engineering has taken place because in the end it has meant a saving of money. Take irrigation, which occupies the attention of so many engineers in this country; it is useless unless the enhanced value of the land irrigated more than covers the redemption and annual charges of the irrigation works.

NEED OF ECONOMY.

We must, therefore, make it our business to economise in every way. It is a truism that engineering in its essence is a question of *£ s. d.* All this is platitudinous, yet there is a type of engineer who speaks of engineering practice as something divorced from ordinary economy. Too often in the management of large concerns engineers have been put aside by what is called the "business" man. By his very experience and training the engineer should be the best type of business man. As relevant to this point, many of you will have followed the discussion in the American engineering journals during last year of the reasons why engineers are not more often appointed to general managements of railways and other large concerns of this nature, to city managements and to managing directorships, etc. Engineering has been made a profession and, though we do not want it to lose any of its professional character, we want to make it businesslike as well. For this reason I welcomed a paper, given to us last session by Mr. Patterson on "Construction Management," and only wish that it had contained more detail. The recent great development of reinforced concrete and its problems, such as sand blending and greater strength and durability of concrete should mean increased economy. Every engineer who shows his brother professional man how to save is a benefactor to the whole profession. Therefore, it is to be hoped that we may get more papers dealing with costs and, as a consequence, labour and its management. There should be scope for scientific papers on white and native labour in their various aspects.

FINANCIAL SIDE OF ENGINEERING.

We have also this responsibility that even one mistake in the design or construction of engineering works gives a set-back to the currying out of other engineering works for many years. We have evidence of this in certain works carried out in South Africa which have not been successful, and in some cases have had to be abandoned. If some of our senior members would give us the benefit of their experience on the financial side of engineering, they would help the engineering profession considerably. Though perhaps the above remarks may be taken as a criticism, it is not to be denied that engineers have taken a leading share in the development of South Africa and have even given examples of methods and work which can be followed with profit by engineers in similar conditions in other parts of the world. Tacheometric surveying and narrow gauge railway practice have been brought to a point difficult to surpass elsewhere. Irrigation practice is younger, but the advance in the past ten years is very great. Undoubtedly a special South African civil engineering practice suitable to this country is growing up, and it is the society's duty to foster and help it.

WORK OF THE S.A.E.C.

It is only right that tribute should be paid to the good work done by the South African Engineer Corps during the recent South-West African campaign. This fine body of about 650 men was recruited entirely from the personnel of the South African Railways, and its officers were mainly civil engineers from this country, many of them members of this society. Its commanding officer in the field was Lieutenant-Colonel F. R. Collins, Superintendent (Mechanics) at the Railways' Headquarters, and the second-in-command was Major A. J. Beaton, Assistant Engineer-in-Chief. It has been and will be my endeavour to get on record in our proceedings the military work done by civil engineers from South Africa in the campaigns in which this country is especially interested. Last session we had the pleasure of a paper from Captain V. G. Cocks, S.A.E.C., on the reconstruction of the railway from Luderitzbucht to Windhuk, i.e., part of the work done in the southern portion of South West Africa. Other work done in the south was carried out under Major Beaton and Major Bateman, and I hope that we shall be able to fill up these gaps by getting notes from these two gentlemen on their work. Major Beaton promised me that he would prepare a short paper containing technical details, but he has been called away to military service. I feel certain that when he returns he will give to this society the benefit of his experiences. From all persons who took part I have heard nothing but praise for the efficiency and celerity with which the engineering work connected with the military operations in South-West Africa was done. Credit must also be given to the work of the corps and to all the railway staff for the work done during the anxious time of rebellion. Another highly creditable work carried out in connection with the South-West African military operations under Mr. N. K. Pretorius, as Resident Engineer, was the construction of the Prieska Kaalfontein Railway, involving, as it did, the special difficulties of crossing the Orange River. Day and night work was done, and the railway progressed at an average of about two miles a day—once well over five miles of track was laid in a day. I have not been able to get a paper on this railway, or the important work done at the Orange River, but an interesting account is given in the *South African Railways and Har-*

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(Editor, "S.A. Mining Journal.")

Vol. I.

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hours Magazine for August, 1915. We must not forget the work done at the base in South Africa by the General Manager, now Sir William Hoy, Mr. A. M. Tippet Engineer-in-Chief; Mr. M. D. Robinson, New Construction Engineer; Mr. J. Mackenzie, Bridges Engineer; and many others—work which tended so much to the efficiency of the operations.

WATER BORING UNIT.

Another body of men which did splendid work in these military operations was the Water-boring Unit, under Major G. Ireland, with which was attached Captain A. L. du Toit as geologist. To everybody's surprise it opened up water for Colonel Berrange's force in its trek across the Kalahari Desert for the greater part of the distance and also did very useful work in South-West Africa, particularly for the northern advance. Very valuable geological data was collected, and the results obtained may have a very important bearing on the opening up of the Kalahari. In this connection also, the important work done in organisation at the base under Mr. F. E. Kauthack, the Director of Irrigation, must not be forgotten.

EDUCATION.

The education of civil engineers in South Africa was dealt with by my predecessor, Mr. Mackenzie; but I may also be permitted to touch on this topic. As I have tried to make clear in my opening remarks, I think that the engineering student should be made familiar with the "economy" of engineering. He can be guided into an "economical" way of thinking, and the principles of scientific management can be put before him. Only practical experience can enable him to apply them. Engineering education is fairly well provided for in the two colleges at Capetown and Johannesburg, and also the practical training by means of indentures, to the chief Government engineers. The question arises as to the number of young civil engineers which the country can absorb. I estimate that, exclusive of the mining industry, there are at least 400 civil engineers in South Africa. Now, it must be remembered that the natural policy of the country is that its own sons must be enabled to occupy the positions which it has to offer. This does not mean that these young engineers will supplant the older "imported" engineers. They start on the lowest rung of the ladder and will only rise to positions of responsibility in the lapse of time. It does mean, however, that "imported" engineers will become fewer and fewer, as is the case in Canada and Australia, and in all countries where a strong spirit of nationality has developed. Of course, if an "imported" engineer is not brought to South Africa, then South Africa has no responsibility towards him. Taking the estimate of 400 civil engineers and the high average professional life of 25 years, this means an output of 16 students a year, assuming no increase. Many engineering students enter farming occupations, and taking into account the increase in the "sphere of influence" of South Africa through the war and the natural increase through development, it does not seem to be unreasonable to suggest that an output of 20 to 25 civil engineering students a year in normal times is a moderate estimate. I shall be grateful for the opinion of other engineers, as naturally this question is an important one, and it is certainly not my desire to "swamp the market." May I express my gratitude to my brother engineers who have had under them students for practical training, for the encouragement and kindness with which they have received them and the very great interest they have taken in them.

SOUTH AFRICA'S INFLUENCE.

In concluding this address, I should like to reiterate that, though the sky is at present overcast, the future is bound to be bright. As the Union of the four Provinces has brought engineers in South Africa closer together, so the share which South Africa has taken in the war has increased its influence over the whole of Africa south of the equator, and this is bound to mean that all engineers working in this area are brought into closer contact. South African practice will extend, and with it scope for the South African engineer. As the special problems connected with disease are overcome so these vast tracts of the earth's surface will be opened up. Even in this country there

await for solution many problems, such as that of soil erosion, and it may be that, in the future, the control of rainfall will be practicable. Much work has been done recently in the study of atmospheric conditions, and as science is progressing so rapidly he would be a bold man who would deny its possibility. Professor Snape also read an account of the engineering work from the occupation of Walvis Bay and Swakopmund to the termination of hostilities, prepared by Lieut.-Colonel Celliers, officer commanding S.A.E.C., and notes on the work of the Water-boring Unit by Dr. du Toit.

Water Board Second-hand Machinery, Plant and Scrap.

In January, 1911, the Rand Water Board authorised the sale of a large quantity of machinery and stores and materials, which were then considered unserviceable from the Board's point of view. At that time the value of this surplus plant and material was estimated at £6,945. Occasionally since then sales have been effected, but these have not been considerable either in number or in value. The present book value of the surplus stocks on hand is about £5,000, after allowing for the annual depreciation written off, and the prices obtained for the stores and materials sold. The Board intends to dispose of these surplus stocks now, when the demand for, and the prices of plant and materials are better than they have been for many years past. As a matter of principle, the proposed sale of this second-hand property will be brought to the notice of the public, and no private sales will be effected until such publicity, as is possible in the circumstances, is given to the proposed sales. The following procedure will be adopted in this matter:—A list of the surplus machinery, plant and material which the Board has for disposal, showing the net selling price of each article, will be prepared by the Chief Engineer, and copies printed in pamphlet form. A copy of this list will be forwarded to each member of the Board, to the Commercial Exchange, and to the various local machinery agents, and advertisements will be inserted in the public Press in five or six of the chief towns of South Africa, setting forth a general description of the machinery, etc., for sale and inviting those interested to apply to the Board for a copy of the list.

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NOTICE TO SHAREHOLDERS.

NOTICE IS HEREBY GIVEN that the Twenty-first Ordinary General Meeting of Shareholders in the above Company will be held in the Board Room, Consolidated Building, corner of Fox and Harrison Streets, Johannesburg, on Friday, the 26th day of May, 1916, at 10.20 o'clock in the forenoon, for the purposes following:—

- (1) To receive and consider the Balance Sheet and Accounts for the year ended 31st December, 1915, together with the Reports of the Directors and Auditors.
- (2) To elect Directors in the place of Messrs. E. Brayshaw and C. Marx, who retire in terms of the Articles of Association, but are eligible, and offer themselves for re-election.
- (3) To appoint Auditors for the current year, and to fix the remuneration for the past audit.
- (4) To transact any other business which, under the Articles of Association, may be transacted at an Ordinary General Meeting.

The Transfer Books will be closed from the 11th to the 26th May, 1916, both days inclusive.

By Order of the Board,

JOHANNESBURG CONSOLIDATED INVESTMENT COMPANY, LIMITED,
Secretaries.

per FRANK HALL.

Head Office,
Johannesburg,
20th March, 1916.

New Primrose Gold Mining Company, Limited.

(INCORPORATED IN THE TRANSVAAL.)

NOTICE TO SHAREHOLDERS.

NOTICE IS HEREBY GIVEN that the Annual Ordinary General Meeting of Shareholders in the above Company will be held in the Board Room, Consolidated Building, corner of Fox and Harrison Streets, Johannesburg, on Friday, the 26th day of May, 1916, at 10.40 o'clock in the forenoon, for the purposes following:—

- (1) To receive and consider the Balance Sheet and Accounts for the year ended 31st December, 1915, together with the Reports of the Directors and Auditors.
- (2) To elect Directors in the place of Messrs. E. Brayshaw and S. B. Joel, who retire in terms of the Articles of Association, but are eligible, and offer themselves for re-election.
- (3) To appoint Auditors for the current year, and to fix the remuneration for the past audit.
- (4) To transact any other business which, under the Articles of Association, may be transacted at an Ordinary General Meeting.

The Transfer Books will be closed from the 11th to the 26th May, 1916, both days inclusive.

By Order of the Board,

JOHANNESBURG CONSOLIDATED INVESTMENT COMPANY, LIMITED,
Secretaries.

per FRANK HALL.

Head Office,
Johannesburg,
20th March, 1916.

Glencairn Main Reef Gold Mining Co., Limited.

(INCORPORATED IN THE TRANSVAAL.)

NOTICE TO SHAREHOLDERS.

NOTICE IS HEREBY GIVEN that the Twenty-third Ordinary General Meeting of Shareholders in the above Company will be held in the Board Room, Consolidated Building, corner of Fox and Harrison Streets, Johannesburg, on Friday, the 26th day of May, 1916, at 2.30 o'clock in the afternoon, for the purposes following:—

- (1) To receive and consider the Balance Sheet and Accounts for the year ended 31st December, 1915, together with the Reports of the Directors and Auditors.
- (2) To elect Directors in the place of Messrs. C. Marx and S. B. Joel, who retire in terms of the Articles of Association, but are eligible, and offer themselves for re-election.
- (3) To appoint Auditors for the current year, and to fix the remuneration for the past audit.
- (4) To transact any other business which, under the Articles of Association, may be transacted at an Ordinary General Meeting.

The Transfer Books will be closed from the 11th to 26th May, 1916, both days inclusive.

By Order of the Board,

JOHANNESBURG CONSOLIDATED INVESTMENT COMPANY, LIMITED,
Secretaries.

per FRANK HALL.

Head Office,
Johannesburg,
20th March, 1916.

New Unified Main Reef Gold Mining Co., Ltd.

(INCORPORATED IN THE TRANSVAAL.)

NOTICE TO SHAREHOLDERS.

NOTICE IS HEREBY GIVEN that the Eighteenth Ordinary General Meeting of Shareholders in the above Company will be held in the Board Room, Consolidated Building, corner of Fox and Harrison Streets, Johannesburg, on Friday, the 26th day of May, 1916, at 12.30 o'clock in the afternoon, for the purposes following:—

- (1) To receive and consider the Balance Sheet and Accounts for the year ended 31st December, 1915, together with the Reports of the Directors and Auditors.
- (2) To elect Directors in place of Messrs. G. Imroth and J. Munro, who retire in terms of the Articles of Association, but are eligible, and offer themselves for re-election.
- (3) To appoint Auditors for the current year, and to fix the remuneration for the past audit.
- (4) To transact any other business which, under the Articles of Association, may be transacted at an Ordinary General Meeting.

The Transfer Books will be closed from the 11th to the 26th May, 1916, both days inclusive.

By Order of the Board,

JOHANNESBURG CONSOLIDATED INVESTMENT COMPANY, LIMITED,
Secretaries.

per FRANK HALL.

Head Office,
Johannesburg,
20th March, 1916.

Witwatersrand Gold Mining Company, Limited.

(INCORPORATED IN THE TRANSVAAL.)

NOTICE TO SHAREHOLDERS.

NOTICE IS HEREBY GIVEN that the Annual Ordinary General Meeting of Shareholders in the above Company will be held in the Board Room, Consolidated Building, corner of Fox and Harrison Streets, Johannesburg, on Friday, the 26th day of May, 1916, at 12 o'clock noon, for the purposes following:

- (1) To receive and consider the Balance Sheet and Accounts for the year ended 31st December, 1915, together with the Reports of the Directors and Auditors.
- (2) To confirm the appointment of Mr. G. Imroth as a Director in the place of the late Sir George Farrar, Bart., D.S.O., and to elect Directors in the place of Messrs. J. Dale Lace and Henry Nourse, who retire in terms of the Articles of Association, but are eligible, and offer themselves for re-election.
- (3) To appoint Auditors for the current year, and to fix the remuneration for the past audit.
- (4) To transact any other business which, under the Articles of Association, may be transacted at an Ordinary General Meeting.

The Transfer Books will be closed from the 11th to the 26th May, 1916, both days inclusive.

By Order of the Board,

JOHANNESBURG CONSOLIDATED INVESTMENT COMPANY, LIMITED,
Secretaries.

per FRANK HALL.

Head Office,
Johannesburg,
20th March, 1916.

Van Ryn Deep, Limited.

(INCORPORATED IN THE TRANSVAAL.)

NOTICE TO SHAREHOLDERS.

NOTICE IS HEREBY GIVEN that the Eleventh Ordinary General Meeting of Shareholders in the above Company will be held in the Board Room, Consolidated Building, corner of Fox and Harrison Streets, Johannesburg, on Friday, the 26th day of May, 1916, at 3.45 o'clock in the afternoon, for the purposes following:—

- (1) To receive and consider the Balance Sheet and Accounts for the year ended 31st December, 1915, together with the Reports of the Directors and Auditors.
- (2) To elect Directors in the place of Messrs. G. Imroth and C. Marx, who retire in terms of the Articles of Association, but are eligible, and offer themselves for re-election.
- (3) To appoint Auditors for the current year, and to fix the remuneration for the past audit.
- (4) To transact any other business which, under the Articles of Association, may be transacted at an Ordinary General Meeting.

The Transfer Books will be closed from the 11th to the 26th May, 1916, both days inclusive.

By Order of the Board,

JOHANNESBURG CONSOLIDATED INVESTMENT COMPANY, LIMITED,
Secretaries.

per FRANK HALL.

Head Office,
Johannesburg,
20th March, 1916.

Government Gold Mining Areas (Modderfontein) Consolidated, Ltd.

(INCORPORATED IN THE TRANSVAAL.)

NOTICE TO SHAREHOLDERS.

NOTICE IS HEREBY GIVEN that the Sixth Ordinary General Meeting of Shareholders in the above Company will be held in the Board Room, Consolidated Building, corner of Fox and Harrison Streets, Johannesburg, on Friday, the 26th day of May, 1916, at 3 o'clock in the afternoon, for the purposes following:—

- (1) To receive and consider the Balance Sheet and Accounts for the year ended 31st December, 1915, together with the Reports of the Directors and Auditors.
- (2) To elect a Director in the place of Mr. C. Marx, who retires in terms of the Articles of Association, but is eligible, and offers himself for re-election.
- (3) To appoint Auditors for the current year, and to fix the remuneration for the past audit.
- (4) To transact any other business which, under the Articles of Association, may be transacted at an Ordinary General Meeting.

The Transfer Books will be closed from the 11th to the 26th May, 1916, both days inclusive.

By Order of the Board,

JOHANNESBURG CONSOLIDATED INVESTMENT COMPANY, LIMITED,
Secretaries.

per FRANK HALL.

Head Office,
Johannesburg,
20th March, 1916.

Consolidated Langlaagte Mines, Limited.

(INCORPORATED IN THE TRANSVAAL.)

NOTICE TO SHAREHOLDERS.

NOTICE IS HEREBY GIVEN that the Thirteenth Ordinary General Meeting of Shareholders in the above Company will be held in the Board Room, Consolidated Building, corner of Fox and Harrison Streets, Johannesburg, on Friday, the 26th day of May, 1916, at 11.20 o'clock in the forenoon, for the purposes following:—

- (1) To receive and consider the Balance Sheet and Accounts for the year ended 31st December, 1915, together with the Reports of the Directors and Auditors.
- (2) To elect Directors in the place of Messrs. J. Friedlander and J. Munro, who retire in terms of the Articles of Association, but are eligible, and offer themselves for re-election.
- (3) To appoint Auditors for the current year, and to fix the remuneration for the past audit.
- (4) To transact any other business which, under the Articles of Association, may be transacted at an Ordinary General Meeting.

The Transfer Books will be closed from the 11th to the 26th May, 1916, both days inclusive.

By Order of the Board,

JOHANNESBURG CONSOLIDATED INVESTMENT COMPANY, LIMITED,
Secretaries.

per FRANK HALL.

Head Office,
Johannesburg,
20th March, 1916.

SOUTH AFRICAN RAILWAYS & HARBOURS.

Excursion Facilities

EASTER HOLIDAYS.

¶ General Excursion Facilities 14th to 25th April.
SPECIAL EXCURSIONS.

Natal Winter Season.

¶ Cheap Fares to DURBAN, etc., in operation on certain days during the months of May, June, July and August.

Mid-Winter Excursions (School Vacation).

¶ Tickets at Single Fare for the Return Journey, during period 22nd June to 13th July. Return Journey (distance over 25 miles) to be completed by 13th August.

South-Western Districts of the Cape Province.

¶ Cheap Fares to MOSSEL BAY, GEORGE, PORT ELIZABETH, PORT ALFRED, EAST LONDON, on certain days during period 14th to 31st July.

Lourenco Marques Season.

¶ Reduced Fares from Stations in TRANSVAAL on 14th, 21st and 28th July.

Victoria Falls Tours.

¶ To leave CAPETOWN 26th June.—Fare £24.
To leave JOHANNESBURG 8th July—Fare £15.

FOR FULL PARTICULARS SEE SEPARATE HANDBILLS.

Johannesburg,
March, 1916.

W. W. HOY,
General Manager.

THIRTEEN BUTTERS' FILTER PLANTS

now operating on the Rand and giving complete satisfaction to everyone concerned.

Full particulars and operating data will be given on application.

50 lb. samples of slime will be tested free of charge to determine its filtering capacity. Estimates for plants, accompanied by complete general arrangement drawing, supplied on short notice. Write us for pamphlet regarding our process.

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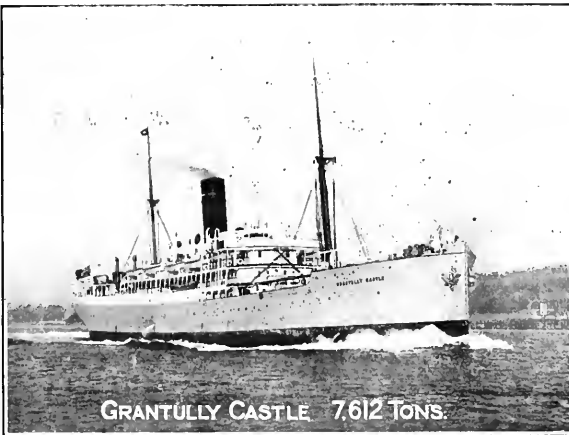
187, Exploration Building, Johannesburg.

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Union Castle Line.

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ROYAL MAIL STEAMERS sail homewards from Durban at daybreak every Sunday, and from Capetown at 1 p.m. every Saturday, calling at Madeira.

MAURITIUS AND REUNION SERVICE.—Sailings at stated intervals.

THROUGH BOOKINGS are arranged to America and Continental ports.

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Kingdom and the Continents of Europe and America, may be prepaid in South Africa.

COMBINED LAND AND SEA TOURS.—In conjunction with the Railway Administrations in South Africa, the Company issues Combined Rail and Steamer Tickets for Circular Tours at REDUCED FARES. Tickets are available for six months, and the journey may be broken at any point.

For full particulars of Freight and Passage Money apply to the Agencies of the

UNION-CASTLE MAIL STEAMSHIP COMPANY, LTD.,

AT CAPETOWN, PORT ELIZABETH, EAST LONDON, DURBAN, LOURENCO MARQUES, BEIRA AND JOHANNESBURG, OR TO THE SUB-AGENTS IN THE PRINCIPAL TOWNS.

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Electric Co.,**
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Phone No. 4321,
JOHANNESBURG.



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It has high elastic limit.

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